The Thesis Committee for Leora Simcha Visotzky
Certifies that this is the approved version of the following thesis:

A Manifesto on Making:
The Knowledge Built Building a Chair

APPROVED BY
SUPERVISING COMMITTEE:

Supervisor: _____
Igor Siddiqui

Co-Supervisor: _____
Mark Maček

A Manifesto on Making:
The Knowledge Built Building a Chair

by

Leora Simcha Visotzky, B.A.

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Dedication

To David, Little Guy, and Arthur, with whom love would remain if all else fell away.

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Thank you to Michael Benedikt—who has been my boss, advisor, and friend—for believing the less-talked-about ideas are also worthwhile.

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Abstract

A Manifesto on Making:
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Leora Simcha Visotzky, M.S. Arch. St.

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Supervisors: Igor Siddiqui and Mark Maček

Craft is the unification of the work of the hand and the work of the mind through material to produce an object with meaning. A craftsman is he or she who engages in the process of making with conscious intent and engagement with material and a broader scope of people and nature. Today, advances in mechanization and industry have allowed us to embrace a passivity that leaves us disconnected from the world and other people. We can look to craft, particularly with wood, as an antidote for this loss of connection. Through material specificity, the way handwork can offer the maker meaning about the place of the self in the world, and the way in which it illuminates the greater network of people, objects, and nature in which the maker exists, craft is a vehicle by which to produce knowledge otherwise unavailable through today's methods of production and consumption.

Through a personal account of the process of making a rocking chair out of wood and an examination of past and current scholarship surrounding craft and ontological aspects of identity, perception, and experience, the following examination, in conjunction with the actual process of making, aims to create a place for dialogue in the space between aesthetic philosophy and craft, creating a new paradigm for the role and definition of hand work today. It is an inquiry into the relationship between making and the production of knowledge.

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Introduction

> …people still make paintings and they are still taken seriously as part of our critical dialogue about culture. This is because painting, like all of the fine arts, has been 'intellectualized' through aesthetic theory so that it continues to be understood as a discursive, critical activity laden with metaphorical meaning and cultural significance. Like painting, craft cannot compete with mechanical production and, like painting, if craft is to survive in the modern world of the twenty-first century, it must make itself understood as a *way of bringing objects into the world that is meaningful in and of itself.*
> –Howard Risatti[1]

To be a maker is to articulate the relationships between the self, the material, and the object. To engage in the process of making by hand is to dwell in the unfolding of these relationships and the subsequent ways in which they impact the self and the world. Craft, as an entity, unites thinking and making through the transformation of material into an object. Engaging in this process affords the opportunity to contribute to the emergence of making as a critical practice and voice in the field of design and production and to engage in the world in a meaningful way. The discussion that follows emerged from my process of making a mahogany rocking chair and writing and reading about making while doing so.

While scholarship exists as far back as Marx and Ruskin accusing burgeoning industry and mechanization of erasing a meaningful way of life and decrying these new processes as thieves of individual freedom—and an additional thread of dialogue arose pitting craft against fine art—there is a deficiency of scholarship and theory surrounding the space between craft and the production of knowledge and the *current* meaning and value of making something by hand today *amidst* the world where automated processes and digital fabrication dominate contemporary discourse. Do physical contact with material, slowness of process, and imperfection have value when mechanized processes have long outshined the efficiency of the workshop, we can build and engineer in ways we never thought possible, and lives are saved every day by 3-D printers and laser surgery? How can the work of the hand continue to shape our worldview and serve in, as Howard Risatti describes in *A Theory of Craft: Function and Aesthetic Expression*, "the development and expression of human values"?[2]

Despite dematerializing technology, material and our experience of it persist. Craft-oriented movements that lost cultural relevance and became relegated by theorists as lower than art and design have reemerged in the twentieth and twenty-first centuries seeking to find their place in the critical dialogue surrounding the creation of culture. Today, we see an increase in hands-on production in defined fields through traditional methods, and the nascent efforts to articulate a canon of theory on the value of the handmade. What follows will indeed posit a critical theory of the process of making by hand that aims to create a new paradigm for the work of the hand and find a place for its contemporary value. By examining the way in which making by hand constructs a relationship between the maker, the material, and the object that is emotionally charged—and, in turn, offers insight into the place of the self in the greater context of the world and more authentic engagement with and reverence for the world—an effort is made to fight the loss of the mode of understanding that comes with the treating craft as the poor relative of Fine Art or Design.

Both sides of this investigation—the following theoretical approach based on literature and the hands-on approach through making a wood rocking chair—are academic in nature in that they are exploratory, subjective, based on precedent, and trying to further dialogue. It is difficult to say which came first, the theory or the practice. While I read much of the existing theory discussed here before making the chair, the process of making brought meaning and applied knowledge to the theory, and I knew before reading the theory that I would be embarking on this project of making. There is no clear-cut structure to the dialogue between theory and practice. The mind and hand engage in fluid dialogue. Thinking and making, theory and application, constantly enlighten one another in a continuous feedback loop, informing the understanding of the self. A discussion of this phenomenon will play a significant role here.

For this reason, this investigation is presented via what may seem to be an unconventional combination of voices in an academic paper—both mine—that vacillate between personal, first-person narrative and theoretical analysis, much as did my experience while making. As the agency of the maker is such a central concept of craft, first-person narrative served as a most-fitting indicator of this author's hands-on participation.

While we will discuss craft as an entity that unites thinking and making, the nature of the investigation itself unites theory and object. All of the threads of the thinking/making relationship, no matter their organization, resulted in the production of knowledge. Knowledge is not separable from its environment and neither is the process of making. Frank Wilson defines knowledge as "…*any* state in an organism that bears a relationship to the world,"[3] and therefore the physical process of making—of interacting with the stuff of matter, experiencing the world through the body—creates a unique and reverent knowledge of the world today, and we will expose its present and potential value.

Chapter 1: Context

THE PROBLEM

We should begin this inquiry into the value of physical work with the qualification that none of this study is meant as an argument *against* mechanization. This is a positive affirmation of the work of the hand. It is worth noting that my advisors for this piece are a digital fabricator and a handworker. This pairing helps serve as a sort of warning. It is easy, in trying to articulate what I am problematizing by making things by hand, to go up against methods other than mine, paint them negatively in trying to show why my method is good. But this is not my intent. In particular is the obvious fact that automatization and digital fabrication are pushing innovation forward. They can and do promote individual creativity, allowing students and practitioners to try multiple approaches to their designs faster and with more efficiency; manufacturing is developing communities and enabling greener building, allowing more people to play a role in the shaping of their own environments; people on the fringes are able to contribute to central projects; supply chains link people and places thousands of miles from one another. In many indisputable ways we are more "connected" than ever before. To combat this would be counterproductive.

Through this project I am striving, rather, to show how the work of the hand can be a valid, contemporary archetype as opposed to an anachronistic method that we revive for the sake of nostalgia. While traditional and current theory on the value of the work of the hand might say that craft should focus on "a return to methods" or "a renewed commitment to our things," looking to the past as a time when "our priorities were straight" and "the important things mattered," little mention gets made of the way in which the value of making by hand may be different today, and that this new place in which this work exists is just as valuable as that which it inhabited before. How could the value possibly be the same when culture has so radically changed? Can making by hand provide a counterpoint to the culture of consumption created by automatization? Can it reconnect us to nature? Can it root us in history while still pushing us into the future? Can it connect us to one another in a way that is different than that of technology? We will dive deeper into each of these

questions by examining aspects of the process I went through as a hand-maker and the way it illuminated craft as a whole, contemporary critical practice.

As far back as the Middle Ages, making by hand was the primary way objects came to being. Workers trained from a young age to develop skills to the degree of mastery and guild systems were key social institutions. The maker, the object, and the user were far from estranged and most often all came from the same community, involved in each other's lives before the object was even an idea in the mind of the maker or commissioner or the material was extracted from the earth. Wilson states, "…The relationship between skill, material, function, hand, and creative mind *was* the social context in which objects existed."[4] The labor of making was a creative endeavor that drew material and people into its process and, as Risatti explains, it was conceived of as so useful and extraordinary that "…the word 'craft' also became associated with magic and the occult."[5]

With the arrival of the Industrial Revolution came an unprecedented marginalization of handwork in favor of mechanized processes. The explosion of industry had its critics from the beginning. As the Revolution's effects changed everyday life and innovation pushed full-steam-ahead, Ruskin spoke of the immense loss of dignity and pride that accompanied the degradation of manual labor, while "Marx argued that machines and all means for the development of production 'mutilate the labourer into a fragment…degrade him to the level of an appendage of a machine, destroying every remnant of charm in his work and turn it into a hated toil.'"[6] Machines would replace the body and, in turn, remove the vital connection between the brain and physical operation, and between people, taking thought and interest in work out of the process of making things.

Later scholars took a more tempered, but equally critical approach. David Pye, a furniture maker and design professor, wrote his manifesto, *The Nature and Art of Workmanship,* in the late 1960s when industrial production was experiencing a new heyday and it seemed we might lose the art of handcraft entirely. He later admitted in a new foreword to the work that he ultimately may have taken too apocalyptic a stance, but he was reacting in a real, emotional way to what he thought was a threat to his and others' livelihoods. Risatti warned that "…it is a cautious reminder of how the machine has removed the process of making as a significant factor from the identity of objects and

thereby has changed our view of the world and the things in it."[7] As machines took over, the fear was that individual creativity and passion for work would disappear. Identity of objects changed, and so did our ways of interacting with them and the world. The extraction of the body from the process of making resulted in a dearth of experience.[8]

In his 2004 article "Material Complexity," Manuel deLanda describes the loss of knowledge that came from this marginalization of the work of the hand, noting "…the deskilling of craftsmen that accompanied mechanization may be seen as involving a loss of at least part of that knowledge, since in many cases empirical know-how is stored in the form of skills."[9] The issue here is *why* this form of knowledge is important. Given all that is gained with mechanization, what is lost with "empirical know-how" and is it really gone? What can empirical know-how offer that continues to make it relevant? What does it mean to disconnect from the body in the process of making? Obvious answers have to do with the limits of technological communication. While everyone has language, not everyone effectively uses it. There is no substitute for *showing* someone how to do something when they cannot understand instructions. People on different continents cannot readily teach each other's hands to work. Communication is most effective when it is physical, in person, and the making of objects is a vehicle for this dialogue. Indeed, we will look at other answers at length. But first, it seems prudent to examine what the *current* assessment is of this situation of "loss"—the discussion happening now and where its deficiencies lie.

The majority of current scholarship advocating for the work of the hand and for craft revolves around denouncing established aesthetic theory for devaluing craft as "lesser-than" art or philosophy and identifying mechanization as the fundamental cause of the demise of work that lives as deeply-embedded cultural tradition. The general reading of history agrees that, when mechanization took the helm, hand work dropped in status and a distinct rift between it and the fine arts opened. Trades took on the stigma of a "bygone" era. And with this relegation of the work of the hand to a lower rung came the notion that, as John Perreault writes, "Those who work with their gray matter are thought of as better and better off than those who actually touch and lift the awful stuff of matter…the handmade, while acknowledged as having some charm, is almost universally thought of as for those who cannot afford the mass-produced."[10]

As hand work was deemed unworthy of society, so did it become seemingly unworthy of theory. Historically, the study of the complexity and variability of materials has been done by craftspeople, not scientists and philosophers, partly because it has been looked down upon as "lesser" work and stigmatized. Material study was (according to Deleuze and Guattari) divided between what was deemed "royal" science and "nomad" science.[11] These approaches, of course, overlook the important fact that it takes significant gray matter to work with actual matter, and that one would be quite impossible without the other (and also overlook the fact that mental work, the work of "gray matter," for that matter, can be just as boring and debilitating as physical work).[12] There is a fairly apparent historical scarcity of scholarship surrounding physical making of things and the brainwork it takes to do so.

It is true that now to be in "the trades" is most often to have a lower-class vocation; "blue collar" is a sign of lack of education, not necessarily years of apprenticeship and perfecting of a skill that contributes to the building of society and culture. But today there is also growing a niche of craftspeople bringing honor and social status to the trades by being the best at what they do, making their thought and process apparent in their objects, and catering to cultured clientele.[13] This niche too is now often full of people with educations better and more varied than those of the traditional tradespeople of the past—"giving up" careers as lawyers, using masters degrees to go work in woodshops, leaving behind the big-city life to open diners in small towns.

The other, most widely-held discussion regarding craft has to do with a fear of loss of culture. Walter Benjamin examined the loss of authenticity that came with reproduction and asked how to preserve the sense of history, belonging, and culture in the ever-pervasive global civilization.[14] Kenneth Frampton equated the technologization of work with a loss of identity—a force that has created an amount of information that is, due to its constant advent of new form and methods, overwhelming even for the enthusiast. He proposed that automated solutions are being offered as antidotes to "loss" problems that automatization has actually caused and are, in fact, having the opposite of the intended effect: further distancing us from a world of culture and enabling us to become passive as opposed to participating in meaningful experience.

Designer Louise Schouwenberg writes of the way in which contemporary objects have lost meaning and begun to represent consumptive values, laying the consumer bare to the influence of automated processes and advertising. She calls for a revived commitment to our things.[15] This loss of meaning has set makers afloat, not fitting into academia, and yet also estranged from end-users. Patricia Malarcher elaborates:

> A major problem was a lack in the late 20th century of philosophy regarding the values of objects inherent for use…Bereft of other forms of cultural validation, many artists who have not found a niche in academic life have been drawn to the marketplace and its system of values as the *raison d'etre* for making objects. In effect, this contributed to the removal of their work from the art conversation.[16]

Makers, regardless of their practice of the unification of thought and action, have been left without a place in culture, likely due to the low status of craft determined by industry, and so have their made objects lost meaning.

THE PROBLEM WITH THE PROBLEM

The ways the above arguments are presented are often in the form of laments. The majority of calls for revival of craft are just that, calls for revival, nostalgic soliloquies on loss arguing against technological advancement, which they contend caused craft to shrink into the shadows. They are arguments against kitsch, for quality, and are affronted by the growth of the fields of art and design. And while they are fair positions, they do not make effective arguments *for* the value of handwork. This is the problem with the problem. How can making by hand itself help us with the problem? What does it offer that is missing in current culture? How does it better connect us, as makers, to ourselves, each other, and the world? And what type of knowledge embodied by skilled handwork is now being replaced by methods of making more for less (both economically and meaning-wise)?

We need to approach the sweeping expanse of mechanization as an opportunity for a new paradigm that redefines the value of handwork and questions its counter-arguments.[17] It is my goal to demonstrate what craft may offer the world in terms of meaning.

Risatti explains:

> …craft offers an important corrective or counterbalance to an institutional mentality that today is more and more modeled on a mechano-techno-scientific rationalism

> that has done much to disenchant the world and the things in it; by disenchant I mean taking the magic and even the wonder out of the world by accounting for everything, including all actions and experiences, in rational, empirical terms…(craft) is about seeking ways to be in the world that recognize the importance of human values and human relationships in order to *counteract the 'limitlessness'* that mechanic-techno-scientific culture encourages.[18]

The work of the hand can serve to soothe this sense of being "afloat" in a world of industry and technology. It can instill wonder and impart certain humanness into experience, recognizing the actual, physical connectedness of people and things.

> Polly Ullrich also addresses our "problem with the problem." She argues:
>
> …The issues surrounding handcrafts, with their relation to the body and physical senses, also allow contemporary artists, working in a wide variety of fields, to investigate what has become a new paradigm in the 21st century—the juxtaposition of our embodied selves and our corporeal world within a technological and scientific worldview that relies on decoherence and cybernization to explain and depict the material environment and human relationships. How can the handcrafts of the 21st century be 'radical' when the history of aesthetics in the West has generally ranked handwork far below brainwork in status? In an age of mechanical duplication, *the hand should never be seen as a replacement for technological or industrial processes.*[19]

Rather than call for a return to an old configuration of the world, we must look at the work of the hand as occupying a place within its current configuration. It cannot any longer function as "instead of" and must find a way to function as "in addition to" and stake its claim as way of offering meaningful, bodily engagement in a reciprocal relationship with the mind. By making things by hand, we are offered the opportunity to connect with the world, recognize the nature of *things* that comes from knowledge and understanding of how they are made and how they fit into a continuum of time that has never actually broken. In gaining technological advancement and industrial production, we can still illuminate the character of our existence in nature and culture through continuing to make things by hand and recognizing the way they make us human. Indeed, practically, there are issues that will never be solved by replacing the hand and the body. There *are* limits to this new-and-improved world that the work of the hand responds to.

Chapter 2: The Making of a Rocking Chair

I chose to explore the connection between making and knowledge by actually making, and writing about what I learned here. The making of a rocking chair would be a physical application of theory and an experiment in how making connected me to nature and culture. I embarked on making in the hope that I would understand how the process affects perception of an object's and the self's existence in the world, and what kind of knowledge this perception would yield. I knew that making a chair mindfully would reveal and build the network of tools, people, and things.

I chose to make a chair, specifically, because of its relationship to the body. A chair holds and contains the body. It can be used by more than one body. The object itself is anthropomorphic; it has a back, seat, arms, and legs. It faces a certain way. It reclines. A chair is an object that speaks to the corporeal connection to the world. A chair is difficult to make and a chair that moves is even more difficult. Before I began making, I researched. I visited the shop of Gary Weeks, a rocking chair maker in Wimberly, Texas, to find out how he makes his rockers and how the rocker had become his most popular, small-batch production item. He said he loved that the chair has emotional value. A rocker is the piece of furniture that witnesses your life. You hold your babies in a rocking chair, you sit in that same chair when you're older, your children sit in it when you're gone. The rocker also interacts with the human form in a unique way. Weeks astutely pointed out that a rocking chair actually does *not* have any moving parts. *The only moving part is you.* I was sold. *This* was the object that would speak to human agency. There is a relationship to it as an object that requires an acknowledgement of use *as* one uses it, and this knowledge of use actually shifts as you experience sitting. The shift occurs somewhere between the moment of deciding to rock, recognizing that it feels good, and the action becoming unconscious. One begins to move the object without thinking about it overtly. How and when does this shift take place? Do we experience this same shift with other objects? Martin Heidegger speaks of the "conspicuousness" of a tool when it breaks,[20] but doesn't recognize the conspicuousness of the object when it functions as it should, nor does he explain how we might begin by

regarding an object as conspicuous and shift to it being inconspicuous within just a few minutes.

Making a rocking chair would demonstrate the importance of making today—its ability to engage, bring us close to nature and people, and teach the maker about the place of the self in the world. It would be an affirmation of the current value of craft. Visiting the Weeks' shop was already extending a branch of the network that making something by hand would create—one that would be greater and more profound than I could imagine. I read and wrote as I made the chair and documented the process the entire time, effectively remaining conscious of my various levels of engagement with the object, the material, and the world as I worked. This is the theory that making a chair built.

Chapter 3: Wood as a Material for Making

> The way the dialogue/dialectical process at the heart of craftsmanship demands intimate knowledge of and respect for material reality produces a far more humanly based, certainly very different, worlding experience than 'design-man-ship.' In this way the craftsman's engagement with material expands the craftsman's imaginative horizon of possibilities by offering a process of experiencing while the work is imaginatively formed into an actual, real entity.[21] —Howard Risatti

> "Consistency is the last refuge of the unimaginative." —Oscar Wilde

It seems the criteria for making something by hand might be few, that as long as one puts hand to material, some benefit will be achieved. And this is so, however, my experience with wood has led me to conclude that it, more so than any other material, is able to offer the experience of distinct, reverent engagement with the physical world that we need. The way wood shows its age and wear, demonstrates diversity, and draws parallels to human life and death, offers us a connection to nature we intuitively understand and a sense of judgment and knowledge that other materials don't afford in the same way.

One of the benefits of industrial production and, today, digital fabrication is that they stretch the limits of material. Materials are made to perform in ways previously unimagined. However, this can also be viewed as detrimental, as a lack of understanding of material that encounters its limits in a different way. As industry has homogenized material behavior, it has also brought material to a point where the machine is unable to compensate for its variation. The craftsperson, however, may compensate for variation in material by adjusting the application of his tools, giving the maker intimate knowledge of the nature of the object being made. Wood is an anisotropic material that lends itself to certain functions better than others and must only be used in certain ways and orientations in order to maintain its strength. Because of this, making becomes more of a dialogue, allowing the material to have a say in the structures it creates.[22] Digital and industrial craft are trying to deal with material specificity in a very different way, essentially trying to *make* materials that are homogenous and therefore don't have the same limitations of an anisotropic material.

What does it mean to use a material that will never have the attribute of "sameness" or uniformity?[23] It forces the maker to develop and hone a keen sense of judgment that does

not exist in a process unconstrained by the specificity of man-made material. It creates knowledge of when to act versus when to think. It slows process as it creates more decisions and intricacies of thought as to how to move forward with a given project and develop processes based on limitations (of both the material and the tools we work it with). It determines the direction of the struggle, to a degree, to which the maker must adapt. It demands engagement. It also means that the maker will always face a degree of the "unknown." No matter how well one learns one's material, there is an extent to which it may act in a way that the maker has not anticipated, and so working with wood also develops a quick-response aspect of knowledge. The maker cannot just barge forward. He or she must react. This unknown-ness also means that more mistakes are made, and knowledge that comes from fixing and moving forward from mistakes (as we will learn about later) develops a sense of humility, rationality, and strategy that might otherwise go untapped.

Juhani Pallasmaa posits natural materials as offering an "authenticity" of experience unlike others, connecting us to a context greater than ourselves:

> The detachment of construction from the realities of matter and craft turns architecture into stage sets for the eye, devoid of authenticity of material and tectonic logic. Natural materials—stone, brick and wood—allow the gaze to penetrate their surfaces and they enable us to become convinced of the veracity of matter. Natural material expresses its age and history as well as the tale of its birth and human use.[24]

Natural materials allow us to relate to nature and see a place for ourselves within it. The limits and relationships posed by natural material offer a framework for human existence. They give us points of reference in what might otherwise be an inconceivable vastness of space and time: Risatti's "limitlessness."

Natural material may also offer a more personal connection to one's own past and future. As natural material wears, one becomes aware of the hands that have made these impressions and the ones that will make more in the future. When making with wood, one is (often painfully) aware of its limits (a startlingly human issue too). One relates to it in its moments of stubbornness and yielding. One bangs it into the corner of a workbench by accident, aware that this is only one in a continuum of countless flaws that will eventually bring "character" to the object as distinct as the character of the piece of wood itself. When

I crack my iPhone screen, it is time to replace my iPhone. When I dent a chair leg, I've given it evidence of our relationship. Wear is something different than anachronism and should not be mistaken as such. It serves as a connection to ongoing time as opposed to freezing an object in a specific one.

Another compelling argument for making with wood has to do with David Pye's concept of "diversity," which he defines as a thing or material that continually offers varying levels of experience as one becomes more and more familiar with it.[25] Many manufactured materials—plastics, for example—give their whole worlds away from afar. When you get up close to a plastic, there is no greater intricacy to explore than when you saw it from a distance. Wood forever offers new details with close inspection, and as the years go by the material itself continues to change in color and surface texture. Pye argues for the importance of craft in the creation of this kind of diversity:

> Free workmanship is one of the main sources of diversity. To achieve diversity in all its possible manifestations is the chief reason for continuing the workmanship of risk as a productive undertaking: in other words, for perpetuating craftsmanship. All other reasons are subsidiary to that one, for there is increasingly a vacuum which neither the fine arts nor industry and its designers are any longer capable of filling.[26]

What is clear is that, for Pye, to live without diversity is to live a half-life, to fail to have experience that is genuine and enriching. We need diversity in order to find meaning in experience and place ourselves somewhere within the vast expanse of context of the world.

Suzanne Ramljak adds to the idea of diversity, stating that "Unlike our encounters with larger objects, intimately scaled works need a greater degree of privacy and heightened awareness to be fully appreciated. Like peering into a peephole, we must gather ourselves around a point and focus with intent; we must become fixated."[27] Diversity also forces us to engage consciously with our surroundings. One would never move in closer to discern the lack of differentiation on a slick, consistent surface of a sheet of plastic, but one will move the body, squint the eyes, and run the fingers over a piece of quilted maple, distinguishing each whorl.

But for me, the most compelling reason to connect to the world through working with wood is because it is the most human material, the one we identify with as most similar to us, and thus the one that speaks most clearly to our connection to nature and one another. There are trees living in Ushuaia, Argentina where the winds average eighty miles per hour—forming many of the glaciers in the region—and the soil is just inches thick. The trees look windblown but frozen in space at the same time, almost like in a photograph (Figs. 1 and 2, right). They speak directly of their environment. From photos of them you know it is windy there without my having mentioned so. It is obvious from their character. There is something that feels eerily human about them, like tortured souls whose feet are bound to the ground and yet they perpetually try to escape.[28]

Even wood made into tools maintains some of its character of life from before its appropriation for use, and its owner must learn it as it learns the personality of a companion. Henri Focillon describes:

> The new implement is never 'finished. A harmony must be established between it and the fingers that hold it, an accord born of gradual possession, of delicate and complicated gestures, of reciprocal habits and even of a certain wear and tear. Now the inert instrument comes alive. To this association no material lends itself better than wood, which, even mutilated and shaped to the arts of man, maintains in another form the original suppleness and flexibility that characterized it when growing in the forest.[29]

We are certainly capable of changing the character of wood to be unrecognizable, but it offers itself as something that wants to maintain its identity.

In particular it is wood *furniture* that seems to hold the most possibilities for profound dialogue about making. Donna Tartt's novel *The Goldfinch* illustrates the beauty of the life of an object of wood furniture and how profoundly it can affect human emotion:

> Downstairs—weak light, wood shavings on the floor—there was something of the feel of a stable, great beasts standing patiently in the dim. Hobie made me see the creaturely quality of good furniture, in how he talked of pieces as 'he' and 'she,' in the muscular, almost animal quality that distinguished great pieces from their stiff, boxy, more mannered peers and in the affectionate way he ran his hand along the dark, glowing flanks of his sideboards and lowboys, like pets. He was a good teacher and very soon, by walking me through the process of examination and comparison, he'd taught me how to identify a reproduction: by wear that was too even (antiques were always worn asymmetrically); by edges that were machine-cut instead of hand-planed (a sensitive fingertip could feel a machine edge, even in poor light); but more than that by a flat, dead quality of wood, lacking a certain glow: the magic came from centuries of being touched and used and passed through human hands. To contemplate the lives of these dignified old highboys and secretaries—lives longer and gentler than human life—sank me into calm like a stone in deep water, so that when it was time to go I walked out stunned and blinking into the blare of Sixth Avenue, hardly knowing where I was.[30]

Wood furniture can connect us to generations, make us aware of the passage of time and our place in it, act as an agent of memory and nostalgia—coexist with us almost as if it is alive. Why wouldn't I want to aim to achieve this?

Donna Tartt touches on the way we recognize objects made of wood, or the material itself, as having identifiably human traits. Of course, we are projecting, but we truly do not treat any other material with this same kinship. Dr. Jim Bower of Dovetail Partners offers an analogy between the life cycle of a tree and that of a person:

> Like humans, trees are delicate when young and typically grow vigorously when given proper nutrition and a suitable environment. As juveniles, they form tissues that differ from those formed in mature trees. They respire, and they require a balanced intake of minerals to maintain health. They metabolize food…If wounded, they react quickly to effect healing. As age progresses, vigor is maintained for a lengthy period but then begins to wane. The top may begin to thin. Life processes eventually slow to the point that the tree has difficulty healing wounds and warding off disease. Finally the tree dies.[31]

While we recognize nature in many materials, we recognize ourselves in wood in that it is the only one that was truly alive in the same sense that we understand that we are alive (and the only one that, sadly, goes bald as well). While we may not be overtly conscious of this fact, we inevitably know, somewhere in our memory, that the material upon which we sit, or upon which our dinner dishes reside, was once a dynamic, living organism, a complex system

that transported nutrients and grew from a seedling into a large, robust body. And this kinship must be real in that we also experience discomfort as we bear witness to wood in its death. The tree stump refuses to recede. It stands as a dismembered body, lobbed off at the ankles. We need to "hire someone to grind the stump" because we can't bear to continually experience the evidence of the life that was. It is too tragic, too poignant to witness every day. But, even when it is ground flat, we still cannot escape its then-lifeless plateau, covering ground like a freshly-filled grave. Eventually, it decomposes, slowly, in the earth as we do.

At the same time that wood reminds us of our mortality, it also serves as a connection to time by being so distinctly "of nature." And the craft of it is indicative of purpose or tradition, the drive or determination of a culture, a continuum that lets us live on, in a way, as opposed to declaring a victory over or experience beyond time.[32] Octavio Paz writes:

> The thing that is handmade has no desire to last for thousands upon thousands of years, nor is it possessed by a frantic drive to die an earthly death. It follows the appointed round of days, it drifts with us as the current carries us along together, it wears away little by little, it neither seeks death nor denies it: it accepts it. Between the timeless time of the museum and the speeded-up time of technology, craftsmanship is the heartbeat of human time. A thing that is handmade is…an object that lasts a long time but also one that slowly ages away and is resigned to so doing…The craftsman's handiwork teaches us to die and hence teaches us to live.[33]

At the risk of sounding trite, wood is also literally with us in the cradle and the coffin.

Chapter 4: Documentation of Process

IDENTITY

It was important for me to document my process while making the chair for several reasons. First, I needed to be able to communicate to my advisors a record of what I had done every week. Second, if I was going to reflect on the process of making after the fact (now), I needed to remember what I had actually gone through in the process of making. I needed a way to "be in it" and review whether this work was actually connecting me to the world as I thought it would.[34] I had to sit down and think about how the theory I was reading was applicable to what I was doing in the shop and vice versa. To this end, I created a blog titled *My Rocking Thesis*,[35] and after every few visits to the wood shop I posted photographs of the process/progress I was making on building the chair and thoughts about my experience.

Thorough documentation of process meant that I would be articulating what making meant to me *while* making, thus positing the role that it served as part of my identity and experience. How was making a piece of furniture going to place me in the world? What was I trying to articulate *during* the process of making by making? Why was this necessary? Why am I drawn to this form of expression, production, and work at all, and why are we as humans? Caroline Evans describes furniture as "…a flexible membrane, possibly an intelligent one, that mediates between the body and the built environment."[36] It can literally place us, our bodies, and offer intelligent insight into what this means.

To summarize my interest in Heidegger, let me say that I am concerned with the idea of what it means to be, what the criteria are for being, and the fact that if we understand that being exists, we are already assuming a degree of understanding of being. Being in the world is the functional, participatory aspect of the larger backdrop that is reality.[37] Risatti notes, "For Heidegger, this manifestation, one that seeks to reinstill into the object its full plentitude and significance, can only happen by understanding the object within and against the larger world."[38] Understanding an object's relevance requires and encourages awareness of the structure of nature and culture and a sense of the self within it. In this way, a handmade object reflects the identity of the maker.

If we can equate craft with recognition of identity, and identity as helping to determine our place in the world, then craft itself may help determine our place in the world—the way in which we are functional in a greater context. And while I feel this in an emotional way, historically it has been taken quite literally as well, as tradespeople took their trades as surnames (Smith, Baker, Sawyer, etc.), literally labeling them with a certain identity that fit within the larger structure of social culture.[39] Craftspeople branded their work (and still do) with the seal or symbol of their shops, and patrons from the Medici to the Arnolfini saw to it that works they commissioned bore their names and even their faces. We have always felt the need to put ourselves on and in our objects.

Aesthetic philosopher and education pioneer John Dewey has a more holistic approach. He describes "Emotion like a magnet drawing to itself appropriate material…"[40] When the self seeks expression, the world adjusts to accommodate. The entire network we understand is, essentially, at stake through expression, and is continually reinvented through every new experience:

> With respect to the physical materials that enter into the formation of a work of art, everyone knows that they must undergo change…It is not so generally recognized that a similar transformation takes place on the side of "inner" materials, images, observations, memories and emotions. They are also progressively re-formed; they, too, must be administered.[41]

And for this reason the relationship between the self and thing being made must constantly be evaluated. If we change over time, or our things change, then so do our things and we change inevitably in response. For us to *know* we have changed is to experience some registration of this change on the world/objects around us. A maker can take this idea further by deliberately using the augmentation of an object as a register of the path of one's identity during the period of making it. By ordering the materials of a work, one orders one's ideas and feelings. To make an object by hand is to give oneself a means by which to see oneself.[42]

And there are certain practical reasons to make furniture as well. In addition to ordering one's ideas and feelings, furniture orders our movement through everyday life,

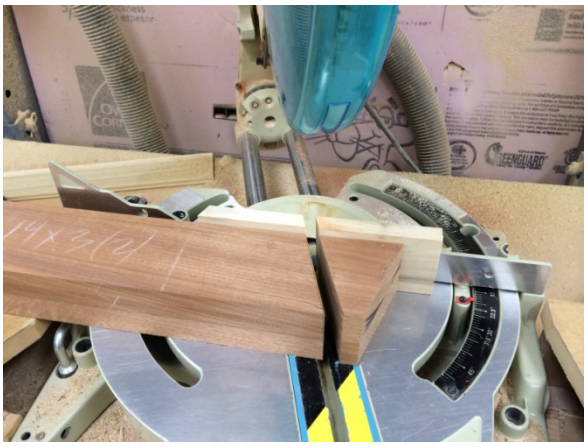
offering points of reference for the body. We have an innate, physical need for enclosure and shelter and furniture structures and organizes this space. Aaron Betsky describes its role:

> We do know this hybrid between structure of inhabitation, object of use, and user in our daily lives. We call it furniture…Traditionally, furniture is something that exists between the act of making shelter, structure, or order, and the body itself. It exists as a piece if technology that lets us inhabit and be comfortable in a world we have made for ourselves. It stands at the end of a long tradition of honing basic forms down into shapes that are easy to construct and that respond to the shape of the body. It confers status and defines areas of use.[43]

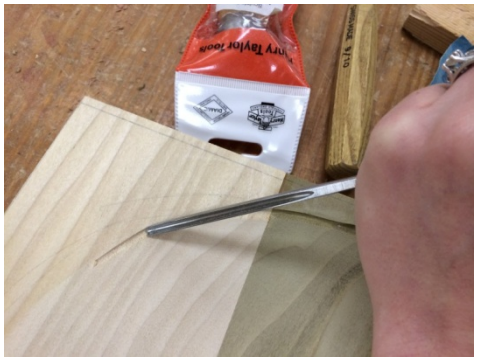
Making furniture is partially about fulfilling the need for order of space and self, and documenting the process is to make this need conscious in order to further illuminate the knowledge gained from doing so. It also leads to further consciousness of the body in space in that making by hand creates an inherent assurance that the things made will resemble the body to a degree.

Is *this* an inherent need? To make the materials we use resemble us? Does this further offer us specific placement and understanding? While Richard Sennett sees craft as a function of a human, innate desire to change things, I argue it is a function of human innate desire to change things so we may use them, as a way of laying claim, mastery, and thus continuing to see the self as the center. And this is partially what drives our desire to use and own natural materials as well as why they bear memory and meaning. They show their history in their flaws and they reveal the process they went through, our mark on them. This is why we choose wood and work it so that it is beautiful, and why we carve stone by hand until it has a mirror finish: to show that we have somehow enhanced something natural. In doing so we reveal the beauty, the soul, of the material from nature, and in turn also a facet of our own soul, view of our place in nature, and desire to make something good of life.[44] We reveal our only physical language of experience. There is a bare honesty in this, the revealing of a human vulnerability in its need for reassurance that its work matters.

AWARENESS OF THE BODY AND THE OBJECT AND THE IDEA OF PERCEPTION



Documenting process also led to important questions of perception of experience. I was forced to remain conscious of what my body was doing and how it was engaging with tools and material at all times in order just to remember to take photographs. Though it did force an artificial constant awareness, it also elucidated when I *would* be more or less conscious of my actions were I not documenting. There were moments I would forget to photograph and then realize later, creating artificial reconstructions of what had happened just so I could keep a record of what I had done that day (Fig 3, above). Or there were actions that were impossible to photograph and I would create some sort of symbolic action or image to represent it (Fig 4, right). Most notable is that it was impossible to photograph myself as I worked. I simply didn't have the hands. As a result, all of the images documenting my process are taken from a "point of view" perspective. While this may seem disappointing, in that you never see me ripping boards on a table saw or intensely concentrating as I try to keep my fingertips while sharpening a chisel, the images are actually truer to my own experience of making—they are what *I* saw—and thus they serve as a record of part of the incredibly unique process of perception (Fig 5, right).



Maurice Merleau-Ponty seeks to reestablish the roots of the mind in the body. He proposes that perception is not just external things acting on us; it is the *relationship itself* between us and things.[45] There is no clear-cut subject (perceiver)/object relationship. It is fluid. It is all-encompassing,

indistinguishable as just a simple idea or vision or concept being "taken in," and so our objects then are participants in a concept that without them would not exist. It is a partnership that speaks to a shared life. Objects are inherently imbued with meaning and value. Therefore, my documentation of the experience of making serves as a diary of perception, which illustrates the relationship between me and the chair being made, no matter how complex. Merleau-Ponty seeks to break down the notion of the mind and body as separate entities. The connection between the mind and body is such that the mind is part of the body it inhabits, which manifests the visible form of our intentions. Our bodies shape our perception of things and, in turn, shape the things we perceive, which shape our perception of things, etc.[46] If the mind and body are inextricable, then the making of an object (both the process and end result) is a physical manifestation of a personal world-view.[47,48] Merleau-Ponty is not the only one to take this position. Thinkers and makers from clothing designer Yojhi Yamamoto, to theorist Howard Risatti, to art critic Polly Ullrich, to neuroscientist Frank Wilson agree on the complex, inescapably-intertwined web that is perception of things, experience, and the idea that "There is not, and cannot be, anything called perception—including any kind of visual or visuomotor perception—just as there is not and cannot be anything called intelligence, independent of the behavior of the entire organism, or of its entire and exclusive personal history of interactions with the world."[49]

AWARENESS OF PROCESS

"The kind of dealing which is closest to us is as we have shown, not a bare perceptual, but rather that kind of concern which manipulates things and puts them to use; and this has its own kind of 'knowledge.'"-Martin Heidegger[50]

Documentation of process lays bare what the process is, and we would be remiss not to mention the tools being used. Heidegger speaks of the "conspicuous tool" as one that makes itself known only upon its functioning poorly, or breaking.[51] When I read *Being and Time* the semester before I made the chair, I argued vehemently that Heidegger was wrong, that in that *we create* the tools and machinery we use in the shop—and then must learn to use them, and then must always maintain awareness of the danger in using them, and stay aware of the quality of their function for the sake of maintenance—they never "fade" into the

background.[52] We always, to some extent, keep their proper function somewhere in our conscious minds.

I *do* still hold this belief to a degree in terms of the bigger picture of making an object. Dewey believed one must remain engaged and present as one uses one's medium in order to arrive at the whole, final, intended work and this seems so much more so when wood is the medium, where one cannot cover up mistakes. Tools and material rarely forgive your transgressions. They become aspects of aesthetic quality. There is also a step-by-step approach that must be followed: certain pieces must not be cut before others; certain parts must be made first in order to make the next pieces the correct size. One must operate consciously in order to move from one step to the next. *However,* upon revisiting the blog and the documentation of my process, I realized there were threads where tools and my consciousness of using them *did* disappear. I made careful mention of how many of the machines work, but almost none of how the hand tools work, which I photographed and used far more often. For example, clamps appear in fifty-seven photos on my blog (Figs 6 and 7, above and right), but never once did I explain how to use them, compared to ten images of the horizontal mortiser, which I discuss in detail (Fig 8, p. 24). The function of these tools—ones that I used most frequently and was most comfortable with—*were* taken for granted, functioned as extensions of my hand and body, and really did not "make themselves known" to me. I hate to eat my words (especially in service of Heidegger), but it was proven before my eyes *because* I was keeping track of my operations. (We will see later how humility became a prominent thread of

process/knowledge for me.) If I had simply made the chair, without photographing every step of the way, I would still stand as I did before seeing the evidence to the contrary.[53] My understanding of the nature of my engagement would be significantly different.

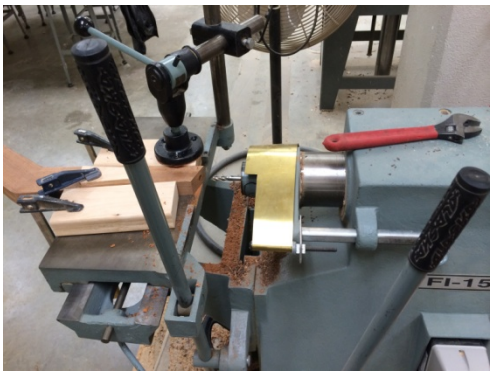


Fig. 8

SLOWNESS

Making anything with one's hands as opposed to using software, documenting what you do as you do it, and reflecting on and writing about what happened after the fact all drastically slow down the process of making. And this is on purpose. I am not a patient person. I would like to be, but I rarely have the patience to try to change. However, early in my masters program I read the essay "Slowness" by architects Tod Williams and Billie Tsien. In it they quote Milan Kundera, who says: "…the degree of slowness is directly proportional to the intensity of memory; the degree of speed is directly proportional to the intensity of forgetting." They follow:

> As our hands move we have the time to think and to observe our actions….When we make changes they occur with effort and a fair amount of tedious scrubbing with erasers, erasing shields, and spit. We have to sort back through previous drawings and bring them to agreement. So decisions are made slowly, after thoughtful investigation, because they are a commitment that has consequence….The grime that builds up from being worked over is poignant and satisfying. We see the history of the presence of our hand.[54]

Drawing and working by hand allow time to make decisions more carefully and consider the consequences of one's actions. When a mistake is made, or a decision changes, some marks always remain—evidence of the process it took to arrive at its final state and the steps that

came before. And particularly with furniture—objects that so commonly stir deep wells of memory, objects that wear slowly, speaking to the hands that have passed over them, the years of use, and passage of time—it is fitting to pay homage to this aspect of its later life even as the ideas of what it will be are still nascent.

Williams and Tsien lectured at The University of Texas in 2013 and I kept a list of words they repeated most frequently as they presented their projects; they were "honor," "nobility," and "modesty." They emphasized repeatedly how important it is to them to recognize and honor all the hands, people, and steps that go into a process. They opened their presentation of one of their buildings with a photo of a note scribbled in their phone message book saying that the then-potential client had called, recognizing this post-it-like communication as the actual inception of the project and a step worthy of documentation. They also showed beautiful, imperfect hand-drawings that made the time spent making them evident in an indescribable way. Remembering these aspects of work helps to keep the maker from getting ahead of herself, and to place the importance that is due onto all of the steps of making, not just on the object.

I am always anxious during the design phase to get to the making phase, most often out of fear of poor time management. But it is better to draw out the design process and make sure that all decisions have been thoroughly thought out (Figs 9 and 10, p.26). I take more time to consider each design iteration, which also helps determine the order of operations for actual building. I am forced to be more patient. I am forced to see the critical importance of each step in determining the outcome and, hopefully, this will help me be a better contributor to the world. The blog further slowed my process. I had to take time after each visit to the shop, reflect on my experience there, and distil it into something I could articulate. This helped clarify my intentions, what was and was not important, and also expose my methods and theories of method that I might not otherwise be aware of. This allowed for refinement and improvement of both design and process.

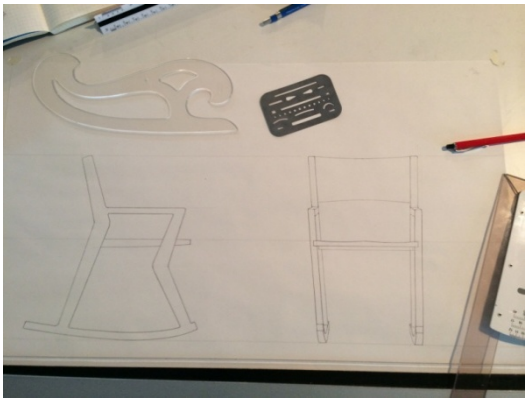


Fig. 9

Fig. 10

And, just as Kundera, Williams, and Tsien posit, Wilson reinforces that slowness related to the body serves as a door onto memory. Wilson writes of Moshe Feldenkrais, an Israeli physicist-turned-therapist, who worked with people with varying degrees of physical paralysis and

> wondered if refinement in movement might be restored to the person who slows down and pays attention to the feel of the body—someone who stops rushing, pulls over, and takes time to pay attention…The more time Feldenkrais spent with people, the more often he discovered that by initiating the correction of movement he could unlock memories of old, forgotten events and buried feelings…[55]

Taking the time to pay attention to slow movement may literally re-awaken the brain and stir memory, connecting different parts of life and the mind to the body. This is the power of craft.

MEANING, MEMORY, EMOTION

"The 'doing something' that pertains to craft is never empty or rhetorical; always it is filled with meaning…"—Howard Risatti[56]

Risatti proposes that how an object is made is closely related to its meaning. However, as we learned earlier, meaning has not been assigned to craft objects in recent history as they have been deemed merely objects of function and not of the function of culture. Yet within function meaning is inherent. If we look at craft as "applied" this implies more intentionality in making and therefore more meaning. If practical function is built into an object by its maker and becomes part of the core of its identity,[57] then so does a

functional object hold meaning if it is built with such intent. Practical function *is* cultural function, related to nature, and thus meaningful. Risatti elaborates:

> The concepts containing, covering, and supporting, as I have argued, are in a very real sense natural (part nature) and in another sense historical, human concepts (based on social convention). The uniqueness of craft is that, being a confluence of these two, it has both a 'natural' life and a social life. Because of this craft does go beyond the purely functional; or more properly, the purely functional in craft is never pure but is always latent with meaning.[58]

And in additional to functional, cultural relevance, meaning in made objects is personal and linked to memory and emotion. John Dewey seeks to explore the way in which we create new experience and meaning for ourselves. He proposes that we do so by drawing on past experience and applying it to the current arrangement of the environment and the self within it, and in doing so we fundamentally change the constitution of those experiences and thus our position within them. The universe and the self, essentially, must continually pull from the past in order to adjust to the present and look to the future, thus constantly altering the presence of the past in the present. The making of an object is a physical manifestation of this process. It draws on embodied knowledge, developed over time and practice, to create a new object. The object, in turn, will hold this memory of the past as well as adjust to and bear evidence of its current life. The making and using of the object fundamentally engages the self and raises the question of its nature in relation to the world, the environment, and other people.

Merleau-Ponty recognizes the mutable nature of memory in relation to things as well, asking rhetorically: "Do I not know that there is a life of ideas, as there is a meaning of everything I experience, and that every one of my most convincing thoughts will need additions and then will be, not destroyed, but at least integrated into a new unity? This is the only conception of knowledge that is scientific and not mythological."[59] He treats time as something that requires us to admit that all things change and are colored by all that came before. This is an important approach to take as a maker of things: to understand that the object of which you have conceived and made is no longer the same object once it leaves your hands or, for that matter, even once you begin to make it, and that its life beyond you will continue to build and change it. There is poignancy in utilizing deep stores of memory in

order to produce things with meaning. Objects often function as the last vestige of this previously experienced life and as an anchor of memory, and documenting process serves as a map of the augmentation and use of memory in order to create.

> *The Goldfinch* pinpoints this poignancy beautifully. Theo, the protagonist writes:
>
> As much as I'd like to think there's a truth beyond illusion, I've come to believe there's no truth beyond illusion. Because, between "reality" on the one hand, and the point where the mind strikes reality, there's a middle zone, a rainbow edge where beauty comes into being, where two very different surfaces mingle and blur to provide what life does not: and this is the space where all art exists, and all magic.[60]

So much of the value of furniture lies in its ability to connect us to some larger beauty and its ability to show time. Theo is drawn to the fragility of the big picture, the delicate balance between loss of and tenacity to the past, and the way it affects our look to the future. Theo's world of the "middle zone" is like John Dewey's place where new meaning is created: it is not created from our experience of the past per se, but within a timeless, continuous adjustment of the past to the present, a place where reality and our experience of reality are forever changing and altering one another.

In *The System of Objects,* Jean Baudrillard speaks of furniture's role in a way Theo would appreciate, positing objects as vessels of meaning, opening the door to the past and memory: "Our environment is…a directly experienced mode of existence…[and the object] a humble and receptive supporting actor…beyond their practical function, therefore, objects—and specifically objects of furniture—have a primordial function as vessels, a function that belongs to the register of the imaginary."[61] Emotions demand of us that we direct them somewhere, and the objects we surround ourselves with are receptive to them and allow themselves to hold these parts of ourselves. They hold our emotion and so they hold our histories.

Dewey also acknowledges that meaning and excitement about and emotional investment in experience come from putting something at stake. Making and its process serve this purpose by putting the self at stake. In making an object, one lays bare her vision of the world—Pye's "workmanship of risk" in more emotional form.

Another factor binding making and objects to memory and meaning is the inescapable march of time. The hand of the maker is evident in the work and in turn functions as a reminder of the maker's body. The object made with hands offers a record of the living person and their life.[62] As M. Anna Fariello writes: "One of the marvelous things about aesthetic objects is that, through them, a transference of meaning can take place over vast periods of time. The meaning invested in an object by a maker in one epoch lies dormant until discovered by someone from another century."[63] Time allows people from different eras of culture to "meet" a maker through their work. The hands that made show their presence and so does the intent of the maker through the lens of history.

How intentionally can we build meaning into an object as we make it? Risatti draws a distinction between functional and non-functional meaning, reminding us that craft objects are generally regarded as merely functional and hence become "invisible" due to their "everydayness."[64] But if we consider that all made objects of furniture begin with the intent of the maker, then we must account for them having inherent, if latent, meaning.[65] If thought becomes a tangible thing, then that thing must be part of the meaning of thought.[66] This fact then accounts for the ability to approach a made object with the capacity for comprehension, already implying, in a sense, an awareness of the object and its place in the world. And certainly objects of furniture, no matter how latent the intent of their making is, are capable of making deep impressions, suffuse with subsequent meaning, on their makers and also on their users. It is "This springing forth from function…" that, as Risatti explains, "…is an example of what it means for an object to be critical from within the field of craft."[67] It illuminates the depth of the origin of the object, and thus of the world (social and physical) from which it is created.

Documenting my process and writing the blog as I made the chair kept all this "springing forth from function" at the forefront of my mind the whole time that I made. Writing as I made kept my emotions fresh and articulated, and showed me what making meant to me as it happened. It was a kind of emotional "reality check" as I moved from step to step, showing myself how making affected my life. It is easy to forget how you felt in the shop once you leave for the day—easy to put the struggle behind you so that when you look at the completed object you think, "How did I do that?" The actions of the body often free

the mind to a place that is difficult to return to in retrospect. But to keep that process in front of oneself at all times truly brings to bear the degree of involvement that it takes to make something.

Chapter 5: Making Mistakes

The process of making and of documenting and reflecting on making *while* making also brings up more practical matters, such as how things actually get made. Where does the knowledge come from to make something? How does the hand inform the mind and vice versa? What kind of knowledge do they yield? How do we handle making when this knowledge is still being developed and mistakes get made? How do mistakes illustrate the knowledge that comes from making by hand and why are they valuable?

THE VALUE OF THE HAND FOR THE BRAIN

Historically, Cartesian dualism separated mind and matter, and in many ways we continue to be convinced of their distinctions. More and more, we are separated from how our things work. To get in my car and start it, I simply touch the door handle while the key is still in my purse and the door unlocks, and then I push a button and the engine starts. I have no understanding of how this machine that weighs thousands of pounds that I operate and trust to keep me and my family safe actually works; I have no knowledge of the meaning of my interaction with this object. The fluid, perceptive relationship itself does not exist, and therefore I gain no knowledge from using it and my agency in its function is reduced to an action of seeming-inconsequence: the push of a button.

The separation of mind and body couldn't be further from reality. As neurologist Frank Wilson states, "I would argue that any theory of human intelligence which ignores the interdependence of hand and brain function, the historic origins of that relationship, or the impact of that history on developmental dynamics in modern humans, is grossly misleading and sterile."[68] Wilson offers a thorough history of the physical development of the hand in conjunction with its relationship to the brain in his *The Hand: How its Use Shapes the Brian, Language, and Human Culture*. In it, he explains the evidence marking how the evolution of the modeling of the hand laid the groundwork in the brain for "cognitive and communicative capacity."[69] The idea of "Universal Darwinism" proposes that the brain was the last organ to evolve only after humans became handier with tools. We can see this process at work in children, of course, who develop tactile abilities which, in turn, allow them to understand that they are a "thing" in the world and then, eventually, that they relate to and impact other

things in the world. As Wilson asserts, "Self-generated movement is the foundation of thought and willed action, the underlying mechanism by which the physical and psychological coordinates of the self come into being."[70] Through the body, the child begins to understand itself within a larger context of reality. Also evident in the way a child evolves is the order in which use of the body and use of language develop. Wilson explains that, "'Intelligent' hand use might not be merely an incidental bequest of our hominid heritage, but—along with language instinct—and elemental force in the genesis of what we refer to as the 'mind,' activated at the time of birth."[71] Babies explore the things around them and their own bodies through practice and use and gradually develop more and more refined motor skills, and only then does the capacity for articulation begin to form. The use of the hand actually develops connections in the brain that allow for the development of verbal communication and critical thought.

The value of the hand for the brain is being proven through evolution as well, which is showing that the development of language and social structure among early humans grew in tandem as the use and design of hand tools became increasingly more elaborate. Wilson presents peer research:

> Reynolds suggests that complex tools, such as axes and knives, may in fact have been customarily manufactured by small groups of people working together, each performing some part of the task. The possible importance of this alternative transcends the mere pragmatics of shared labor. Any such cooperative efforts would have required a means of communicating, which would probably have taken the form of hand signals and other bodily gestures or vocalizations, or both. In other words, cooperative tool manufacture could have provided a crucial precondition for the evolution of language.[72]

It is use of tools by the hand that paves the way for establishment of community and communication between people, quite literally. The use of the hand also vastly pushes forward the evolution of the brain. It creates the network in the brain that opens the door to creating a network in the world (more on this later). So, as Wilson elegantly articulates, "From the perspective of classical *surface* anatomy, the hand extends from the wrist to the fingertips. But under the skin this boundary is just an abstraction…"[73]

EMBODIED KNOWLEDGE/HAND AND MIND

Matthew Crawford offers a logical explanation: "If thinking is bound up with action, then the task of getting an adequate *grasp* on the world, intellectually, depends on our doing stuff in it."[74] And it is "doing stuff" that creates in us a tacit, embodied knowledge, one that opens possibilities for the mind that don't otherwise exist and allows us to "grasp" the world. Architect Florian Aicher quotes Hubert Diem, the head carpenter at the Dornbirn vocational school:

> Anyone who has made something himself, in an elementary way, understands work processes far better. Without experiencing things oneself, without basic knowledge and the skills acquired through practical application, without training the imagination in this way, work in the design and planning office is difficult…Our kind of training believes that…the mind becomes free, because the hand also thinks.[75]

Design, workmanship, and craftsmanship are not so easily distinguishable, as history and/or current theory may lead us to believe. It is true that one may design something with no knowledge of the way that it will come to be made, but when a craftsman designs something, he goes through the process of workmanship in his mind, and when he is working, he redesigns parts and ideas as he goes along. This is inevitable, and it is this back and forth between making and thinking, thinking and making that is craftsmanship. Even if making a thing is done over and over again, the experience is different every time in that the brain and the body relate to it differently every time as the muscles learn the actions and the brain refines efficiency. Body conditions mind, and vice versa. To make something is to exercise this innate combination.[76]

Heidegger refers to this process in terms of the use of the tool:

> The hammering does not simply have knowledge about the hammer's character as equipment, but it has appropriated this equipment in a way which could not possibly be more suitable. In dealings such as this, where something is put to use, our concern subordinates itself to the 'in-order-to' which is constitutive for the equipment we are employing at the time; the less we just stare at the hammer-Thing, and the more we seize hold of it and use it, the more primordial does our relationship to it become, and the more unveiledly it is encountered as that which it is-as equipment….But when we deal with them by using them and manipulating them, this activity is not a blind one; it has its own kind of sight, by which our manipulation is guided and from which it acquires its specific Thingly character.[77]

The tool itself disappears in a way, as an extension of the hand, which is an extension of the mind. Its "sight" that Heidegger mentions, is that tacit knowledge, the point where mind and matter are a fluid process, and the tool is a means with which to employ it. While this version of the process leaves out the long prelude—where before we are familiar with a tool, we must guess its use, or learn it through trial and error or from someone who already has the skill, or, before it exists, we must conceive of it in order to solve a problem and invent it, and this too is that same kind of fluid process—he does acknowledge this process as a hand/mind exchange that creates meaning.[78]

The hand brings the mind knowledge of value. The process by which this knowledge is produced is biological, evolutionary, and necessary to participate in the world. Bruce Metcalf concludes, "A potter who learns to throw with great skill is exercising a biological aspect of the mind…Skilled work is, in fact, a manifestation of intelligence."[79] The hand-work aspect of the biological mind is of no lesser value than that which allows us to sit in an office or work for a think tank. The latter is only possible because of the former, and so should it be recognized as such and looked to for guidance on new ways to navigate the world we live in now. If hand work can create language and culture, then it must still offer value. It is the basis on which we are able to function today, and were able to function on tens of thousands of years ago too. There is power in this. Wilson concludes:

> …the hands can bring an individual not only into a distinctive kind of work but into transforming relationships with people and ideas. As in many such cases, the hand as an instrument of action and contact may become, or seems to be, merely incidental to a more complex process or activity. But even when the hand eventually yields the stage to other skills…its historic role in the acquisition of knowledge and skill during the apprenticeship remains in the foundations, continuing to feed the dynamic process of the imagination.[80]

ACCOMPLISHMENT, FAILURE, ANXIETY

"Everything in American culture is based on expecting to succeed, and I think that failure is really where you learn the most. So to show the work in progress is to show things that are developing, to show the possibility of success but also of failure."—Marina Abramovic

Happiness and a sense of accomplishment that comes from one's work seem like obvious goals, but are not always. Even jobs that can be deemed as intellectual, and

therefore fulfilling to the mind, often have quantitative outcomes (for example, fundraising for academia, writing abstracts for academic journals[81]), which can be intellectually impoverishing. But the outcomes of the work of the hand are qualitative and concrete—quantitative too, in a way—but ultimately incredibly satisfying. Matthew Crawford, think-tanker-turned-motorcycle-mechanic, agrees: "There is a pride in accomplishment in the performance of whole tasks that can be held in the mind all at once, and contemplated as whole once finished."[82] Evidence of your work is there in front of you—"*That* is what I did today"—and it is honest. The object works or it doesn't; it holds your body comfortably, stably, and with adequate strength or it doesn't.

I have spent many hours in the shop of woodworker David Pasztor, who often takes time away from wood to work in a different medium. He paints so that when he comes back to wood he is *not* in the headspace of the strict rules of the wood shop. Why? This does not necessarily mean he will do things differently. There are tried and true ways to "do" wood. So what does this give him? New muscle memory, a different mentality about manipulating materials, and this outlook alone helps drive creative desire and ideas. And so does working with one material provide these benefits to a life otherwise spent in the mind. When Pasztor started using wood, it was not from the desire to "make furniture" but from the simple desire to build, an innate drive telling him to make things and work with his hands. This is not to say that handmaking is not intellectual, but that there is intellectual virtue in physical, sensual experience, that of making things and using things. Richard Diebenkorn once said, "It wasn't art I was interested in, it was drawing and painting…I had no real understanding of drawing and painting as art."[83] There is a satisfaction, a happiness that comes from *doing* that offers the mind a whole, tangible result. Even if it is not always able to be articulated, it is actually *there*.

Hand in hand with accomplishment comes failure, of course, which is far less satisfying or "whole" feeling, but is—as I've learned through experience—an equally important and unavoidable a part of working with one's hands. Crawford speaks to this too, admitting "…I continue to commit acts of idiocy on motorcycles to this day,"[84] and explaining, "In the real world, problems do not present themselves unambiguously. Piston slap may indeed sound like loose tappets, so to be a good mechanic you have to be

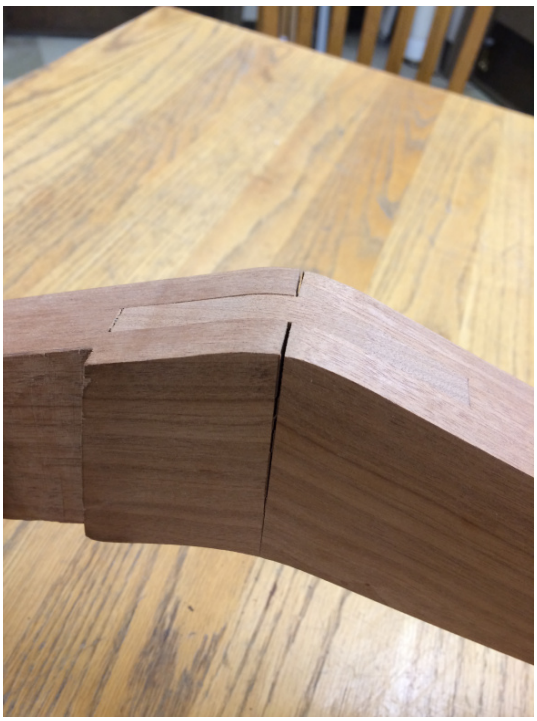
constantly attentive to the possibility that you may be mistaken. This is an ethical virtue."[85] Not only do mistakes need to be made in order to develop embodied, tacit knowledge, but when they get made they afford us the opportunity to learn humility and both the limits and/or open-ended potential of one's skill. One always has to operate with the knowledge that what one already knows may not be enough. This also recalls David Pasztor's practice of periodically working with another material for the sake of gaining fresh perspective. It is a practice that continually checks one's sense of what one already knows and asks whether or not it is enough.

David Pye names this ever-present potential for failure as the "workmanship of risk." Pye defines the workmanship of risk in contrast to the workmanship of certainty, which is essentially that of mass production, where the entire process is controlled by machine and the human hand does not determine the success or failure of the outcome. The workmanship of risk, conversely, is that where, at any time, you could make a mistake that ruins the outcome. In the workmanship of risk, one relies on one's actions, decisions, and physical coordination in order to complete the process one has planned to engage in. This is meaningful in that one is always negotiating one's own trust and confidence in oneself. One questions oneself and draws on knowledge and the ability to find answers.

Another important aspect of the workmanship of risk is that one is inevitably exposing one's process and method of work to others and, in doing so, is sharing with them the possibility and hope of success, but also that of failure (and of embarrassment and/or loss of authorship in addition to just the failure of the object itself). I embraced this wholeheartedly in writing the blog and documenting my process of making step by step. Frankly, I don't know that I realized how much I was exposing my failures until it was actually happening, but this turned out to be a healthy experience that I grew from. This is risky, exposing your potential failure to others, but does it not make success even that much more rewarding? And does it not allow the user/viewer to appreciate the outcome more?

Before I continue lauding the value of failure, I should temper this argument a bit. Cheryl Sandberg's description of the "impostor syndrome" as the "phenomenon of capable people being plagued by self-doubt"[86] in her book *Lean In* asks whether there is a difference between acknowledging the possibility of failure and being self-deprecating about one's

abilities because one is uncomfortable with the possibility of success. To engage in a process in which one must constantly affirm the possibility that they are wrong (and to be among people watching this process) makes it hard to be always confident. I have heard myself tell a novice woodworker (which I still consider myself to be…case in point) that the knowledge from experience I had shared with him "should by no means lead him to believe I know what I'm doing." Is this actually baring my vulnerability for the sake of thoughtful academic discourse, or am I falling prey to the impostor syndrome? While the humility and vulnerability that making engenders are indeed good, ethical virtues, one should be careful not to become mired in self-doubt, as confidence in oneself is an equally necessary virtue for learning and success.



Failure never feels good. No one *likes* failure, and I had days where I knew for certain, going into the shop, that I would feel angry. *However,* failure can, if we let it, help reveal our greatest triumphs. When I encountered one of the larger failures of my project—a crucial joint opening up after it was ready to get glued to the rest of the frame (Fig. 11, right)—it seemed there was no turning back from it. I called Mark, one of my advisors, in a panic. He took a few minutes from the installation he was working on to talk through my problem and help me come up with a plan to solve it. This was an overwhelming moment, one in which I saw clearly the support I have around me, the life situation that the process of making has taken me to, and the realization that every part of the process matters. To be engaged in work that I care about enough that it keeps me awake at night in both joy and panic is unparalleled. This wouldn't have made itself evident without failure. This wouldn't have happened if I were not paying close attention. This wouldn't have happened if it didn't *mean* a lot. "When you're doing your own *real* thing," Wilson affirms, "it's scary because then a failure would be a *real* failure. The fact

that the challenges are connected with your life purpose is what gives them their meaning. They're still scary, but you can face the frustrations because your interest in the goal is so strong…"[87]

Hand in hand with failure are the feelings of anxiety and the emotional investment that come with exposing one's vulnerability and inadequacies. This is part of how we gain knowledge. Jad Abumrad talks about the early days of his radio show *Radiolab,* speaking of the life-or-death feeling that comes with the creative process: that feeling that even if no one is paying attention to what you are doing, it is making or breaking your entire life in that moment. He describes it as the "radical uncertainty that you feel when you try to work without a template," and recognizes "how crummy it feels to try to make something that's new."[88] Now, it doesn't feel terrible all the time, but when it does, it is important to recognize that it means that you are forging ahead. It feels terrible because you *do not* know what you are doing, but you are figuring it out and continuing despite your setbacks so that, eventually, you *do* know what you are doing.

Perhaps I am just looking for validation that failure is okay, but Maria Popova, in writing about Kierkegaard on anxiety and creativity, reinforces Abumrad's assertion. For Kierkegaard, anxiety arises as a product of staring into the abyss of possibility. It is an abyss we can fall into and fail to climb out of, or it is an abyss we fall into and swim in. The "dizzying effect of freedom" and "boundlessness of one's existence" can be stifling or can be generative.[89] I am reluctant to say that anxiety was generative in my own process, as it *felt* stifling, but looking back, I see it was unquestionably a part of my ability to produce.

After an entirely different minor disaster with my chair, I decided I needed a way to hold all the pieces of the chair together temporarily to determine their final lengths. My other advisor, Igor, suggested that I might feel less frustrated if I accepted this issue as one of the constraints of the project, as a parameter I needed to find solutions to just like any other. In response to this constraint I built an armature (Fig 12, p.39) that I could clamp the pieces to, but a few hours in Mark pointed out that I didn't need to be doing this.[90] I was building the armature so I could figure out exactly where each of the pieces were going to meet each other, but I had already done all the planning and mock-ups for this exact reason. I already had this information. This was a lesson learned to trust myself, despite my

acknowledgement of the possibility of failure. I also found that the more I talked to myself, out loud, in the shop, the smoother things went. Part of me feels that in speaking out loud, I was acknowledging myself as myself, in this specific place, with my specific intent at engagement, and this helped give me the confidence to move forward.

Fig. 12

One last "act of idiocy" for posterity: a vital part of my process was building a full-scale mock up (Fig.13, right) as well as full-scale drawing of each piece that I could use as templates for cuts on my final pieces. As I laid the templates on the wood, something was off that I couldn't figure out. Eventually I did…and it was bad. *Somehow* my full-scale drawing, from which I made the template pieces, showed the armrests about four inches shorter than my mock-up. The mock-up was comfortable and so this is the information I needed to follow most closely. What this meant was that the seat was not fitting in the frame as I had planned and the armrest/seat relationship was not as I had planned. If I adjusted anything to fix this, it either changed the length of the armrest or the angle of the backrest, which were both critical. I took apart my mock-up, thinking perhaps that changing the angle of the backrest might be the lesser of the two evils, but it wasn't. At this point, everything I did went terribly: the drill battery died, I stripped out a screw, I tore my pants, and a board

banged my knee really hard. I would have gone home but I was waiting to talk to Mark, so I stayed in a panicked frenzy until he came over. After I explained the issue, which I'd been mulling over for over three hours, it took not thirty seconds for him to suggest putting the mock-up back to how it was supposed to be, and then trying shortening the armrests. I did, and it wasn't so bad. I shortened the armrests an inch and a half. I re-cut the mortises and thinned the armrests down. Ultimately it didn't affect much, but it did solve my problem. So where is the value in this story? I *learned* from it: how to handle things better next time; when I should walk away for the day; that our relationships with objects are complicated and that a simple interaction with another person can completely change one's perspective on an object and what it means to make it.

Chapter 6: My Big Picture: Knowledge and Value

What conclusion can be drawn as to what making offers us now? The aggregate of answers can be personal and difficult to define, but there are universal answers as well. Making things illuminates the social, physical, and natural networks in place, and our particular place within them. It offers us new kinds of reverence for and engagement in the world that are otherwise hard to come by. It offers us knowledge about and the opportunity to define culture and history.

THE NETWORK

"The brain does not live inside the head, even though that is its formal habitat. It reaches out to the body, and with the body it reaches out to the world."—Frank Wilson[91]

While each maker's experience in the woodshop is personal, in no way should this lead one to believe it is solitary. Today, and historically, workshops near one another share tools, knowledge, and excitement about each other's accomplishments. Clients come and go; the maker consults with her peers when she encounters questions; the blade sharpener comes to make his pick up; material is carried in, wheeled and hauled about, and carried out transformed. It is usually loud and bustling. If you glance at the "People Engaged/Conversations Had" section (see Appendix 1, p.62), it should be clear how much interaction and network building amongst people it takes to make something.[92] Nothing is actually made on one's own. There is a simultaneous building of human associations *and* building of furniture.

Octavio Paz speaks to the way these networks become evident to the maker through the work of the body:

> The trans-personal nature of craftwork is expressed, directly and immediately, in sensation: the body is participation. To feel is first of all to be aware of something or someone not ourselves. And above all else: to feel *with* someone…The physical, bodily ties that bind us to others are no less strong than the legal, economic, and religious ties that unite us. The handmade object is a sign that expresses human society in a way all its own: not as work (technology), not as a symbol (art, religion), but as a mutually shared physical life.[93]

Frank Wilson writes of Jack, a restorer of old cars. He shows how the object speaks to the life of its maker. He says, "This car…has a history that is tightly wound up with Jack's own."[94] When Jack began working on cars, he was instantly aware of everyone else's actions around him, and this led him to seek out other people with the same interests. This camaraderie helped him grow and gave him the knowledge to do his work better. Jack's skill and knowledge is thus associated with his connection to others. The things we work on carry and shape our personal histories and they lead us to the drive to grow and demonstrate our knowledge to our network.

Paz says of the craftsman, "His workday is not rigidly laid out for him by a time clock, but by a rhythm that has more to do with the body and its sensitivities than with the abstract necessities of production."[95] And this is another reason that craft is enriching. While you work you can talk to people, listen to music, delight in your senses, and be present. There is a certain admission and acceptance of reality in it that can carry over into our whole way of life. Paz points out regarding craft shops that "…precisely because of their imperfection, they can point to a way as to how we might humanize our society: their imperfection is that of men, not of systems."[96] While the industrial factory and now digital fabrication have taken us far into realms of precision and productivity, they cannot speak to the organization and collaboration of people. Imperfection has this merit.

Dewey explains that we manage and order activities in reference to their consequences: "An activity that was 'natural'—spontaneous and unintended—is transformed because it is undertaken as a means to a consciously entertained consequence. Such transformation marks every deed of art."[97] This idea illustrates, for example, the difference between making a chair because we need a place to sit and making a chair because we intend for a person to sit in it in a certain way and have a certain type of experience. Making may become the means to "consciously entertained consequence" and acknowledgement of the fact that we are able to entertain consequence is one of our responsibilities—certainly as makers—but also as participants in our own and each others' lives and environments.

As an agent in productive social structure, making yields the conclusion that making also connects us to an even *greater* network, that of time, tradition, and a more broadly human connection to the world. Fariello writes:

> As a metaphor, the object yields insight into the human condition. The best works capture the motivations of an individual life and, extending specific circumstances and situations, translate these into a more universal language to reveal a collective human story…The above argument is predicated on the assumption that creative objects made by humans play a significant role in culture, a role interwoven with complex relationships of meaning and value.[98]

She continues, "As a metaphor, the object is a vehicle that carries its viewer into an expanded universe. The more intangible properties of the object—materiality, tactility, intimacy, domesticity, containment, ornament, utility—are difficult to perceive, though they bind us to an ever-evolving human tradition."[99] To be a maker inherently links one not just to other makers and people, but to the evolution of historical circumstance. To make by hand is to carry into the future the understanding of aspects of the human condition that brought us to the point at which we are, and to move forward with educated perspective. Incredibly, in addition to craft's ability to connect us to specific time and culture through form and technique, as we will discuss shortly, it too gives us this connection to all of humanity in a way that transcends the specifics of culture and speaks also to our connection to each other as a species. For all that we feel that we can't fathom how we existed before we had cell phones, or email, or any number of things that propel us forward today, we actually don't *need* any of these things to survive, as Risatti points out.[100] But we *do* need shelter, rudimentary forms of structure to support the body, and vessels to hold our things in order to survive—this need being the origin of making—which means that the handmade connects us in a much more primal way to nature and our own various evolutionary moments.

And so (cue widening camera pan that starts on one person and rises, revealing the building he stands in, then the city the building stands in, then the nature surrounding the city, the planet, the cosmos, etc.) as we are connected through craft to each other, and through each other to the greater expanse of humanity in time, we are connected to the greater natural world. As the wide pan may grow ever wider to an infinite view of space, so may it focus in, from nature, to the world, to us, to a maker in his shop. Risatti concludes:

> On the one hand, [objects] make clear that we have a nonsubjective, noncognitive connection to nature founded in physiological necessity…On the other hand, craft

> objects demonstrate how human subjectivity…has transformed such a basic relationship and transported it to a higher plane. In this sense, craft objects must be seen as nothing less than a physical manifestation of human subjectivity in confrontation with nature. They are a concrete expression of human subjectivity's worlding capacity, of human subjectivity's potential to create a world of culture out of the realm of nature.[101]

ENGAGEMENT AND REVERENCE

Making by hand illuminates the network, and the network itself functions as a sign of our conscious engagement within it, functioning to promote more authentic experience. John Dewey remarked:

> Experience is the result, the sign, and the reward of that interaction of organism and environment which, when it is carried to the full, is a transformation of interaction into participation and communication. Since sense organs with their connected motor apparatus are the means of this participation, any and every derogation of them, whether practical or theoretical, is at once effect and cause of a narrowed and dulled life-experience.[102]

A way to actively seek this participation is through craft. It may open the door to experience and peer in, offering such transformation should one wish to take it by these means. Focillon too agrees, "Form is therefore not primarily line and color, it is a dynamic organization that brings into play the concrete texture of the world as the sum of the body's reactions to that which surrounds it."[103] The made object, or the making of form, offers a means to authentic experience and thoughtful participation. Making an object can elevate experience to that of the extraordinary. And this experience can, quite possibly, continue through the life of the object once it leaves the hands of the maker, meaning that making with thoughtful engagement can foster the authentic engagement of others.[104] This implies an acknowledgement of responsibility on the part of the maker to create things that will be "good," that will enhance the life of their users over time, and create experience in use as valuable as the experience in making. To make an object with intent is to deliberately engage in dialogue.[105]

The work of the hand informs the structure of the brain and fosters embodied knowledge that can cultivate personal responsibility and self-reliance in a world with an increasingly passive population. It is a uniquely human privilege to have this form of contact

with the world, one that has given rise to our place within it and, in turn, one from which we may consciously give to the world.[106] This type of engagement creates an acute awareness that opens up the possibility for reverence: reverence for things, for nature, for the expertise and skills of others, for the small acts and pieces that make up the whole that is experience. A single, handmade object used to be passed from generation to generation; containers made by hand would hold food rations for the year. It is clear how the handmade object commanded a reverence for the cycle of life and sustenance of humanity in the past.

But now, as we (at least many of us) dispose of things readily, what type of reverence does the handmade and handmaking promote? For one, it offers a deep appreciation and awe for the skills and actions of others. Making something is hard to do. Making a rocking chair was *incredibly* hard to do. The people who make this craft look easy hold a place of high regard in my mind and it is one that makes me appreciate the time it took them to reach their points of expertise and drives me to keep practicing, work harder, and contribute to this dialogue more. Focillon recognizes this, commenting, "When we compare what our hand can do to that of the skilled makers, we develop an awareness and appreciation of other human beings and, in the process, a greater degree of self-understanding and self-awareness."[107] For me to study the work of the master essentially puts me in my place. I say this meaning that it is humbling, but also that it gives me a sense of what I have already achieved and what I am capable of achieving and striving to contribute in the future. The appreciation for others that making something fosters serves as an honest gauge of where one and one's contributions stand in relation to the world at the same time that it focuses on our relationships.

Additionally, the *way* that making is practiced promotes a veneration for the even the smaller acts and things in the world (like that of Tod Williams and Billie Tsien for the Post-It that began a building project, like mine for a simple joint that gets cut without difficulty and fits together properly and as intended). This way of making has to do with taking what sociologist Richard Sennett coined an "intuitive leap." One may have skills, and even instructions to follow in order to make something, but there is always a degree of uncertainty as to the outcome and one's own abilities that must be embraced in order to go through with the act of making. No two pieces of wood are alike, and so even an action performed many

times may have different consequences. The leap is one of faith, in effect, where one gathers one's own sense of intent and ability to engage with the tools and the object being made in order to handle and compensate for what comes once in process.[108] It is this "faith" of sorts—in oneself, the process, and the object with which one is essentially creating a relationship—that results in reverence. It is this deep appreciation for when things come out right, when it feels like the universe has actually come together and focused its energy in tandem as you have yours, that making by hand can offer.

Sennett, in his famous work *The Craftsman*, describes the intuitive leap and the reverence it yields through an account of a personal experience. He took a cooking class led by an Iranian refugee who spoke poor English. When he asked her to write down a recipe for stuffed, roast chicken so the class could try to understand her better, she gave her students the following text: "Your dead child. Prepare him for new life. Fill him with the earth. Be careful! He should not over-eat. Put on his gold coat. You bathe him. Warm him but be careful. A child dies from too much sun. Put on his jewels. This is my recipe."[109] The point, of course, was that no matter how specific the instructions were that she could offer her students, nothing could bring them to appreciate the process and the result—nothing could help them to make truly delicious, deeply-flavored food—like their own investment in making it could. The cooks had to revel in the importance of all the details and pay them, and the chicken itself, the respect they deserved in order make food well. This is a theory of method that has value, one that keeps us connected and stands in the way of passivity. The chicken has a life of value that is part of the same network before it reaches the dinner table. The good cook recognizes this as she engages in the process of making it, and the food has value too. This is a way of making that listens to Focillon, who states "The hand is not the mind's docile slave. It searches and experiments for its master's benefit; it has all sorts of adventures; it tries its chance."[110] The leap the hand affords is a path away from docility and towards deep immersion.

KNOWLEDGE

The experience of making with the body establishes knowledge. Risatti explains "…craft technique entails two kinds of learning that leads to two kinds of knowledge: one is

a sophisticated technical knowledge of materials and their properties and the second is a high degree of technical manual skill to readily and effectively work material into the requisite form."[111] And there is also this third kind of knowledge produced that is consciousness of one's place in the world and the ability to engage with it in a meaningful way. The first two types—those of technique and embodied knowledge—must be acquired through practice and repetition in order to free the mind to focus on the intellectual aspects of expression, the third type. Risatti recognizes that the "conscious mind itself seems drawn through the hands to the tips of the fingers…Stretched to the very limits of the body, mind seeps into the object of intention, giving coherent form to otherwise resistant, inchoate manner."[112] If mind seeps into its object through making, it is imbued with meaning upon the hand's engagement with the material. The mind is forming material and seeking answers through the hand in a relationship that produces knowledge and consciousness of experience.

Crawford explains the importance of these types of knowledge: "The current educational regime is based on a certain view about what kind of knowledge is important: 'knowing that,' as opposed to 'knowing how.' This corresponds roughly to universal knowledge versus the kind that comes from individual experience."[113] While knowledge from individual experience can only be lived and not as easily shared, and is therefore often overlooked when globalization marches forward and electronic communication is ubiquitous, it affords a much deeper understanding of the way in which the individual relates to the structure of the world and society. It offers us intellectual tools, through practice, that actually help us decide *how* to be in the world: how to face challenges, handle the unknown, become good at things, and act responsibly and with confidence.

Tacit knowledge gives us the most valuable resource to draw from: memory of experience. Crawford states, "Our ability to make good judgments is holistic in character, and arises from repeated confrontation with real things: comprehensive entities that are grasped all at once, in a manner that may be incapable of explicit articulation."[114] He continues, "When a mechanic makes this kind of judgment, he is relying on tacit knowledge, by which he subconsciously refers what he sees to patterns built up in his mind through long experiences."[115] How do you get to Carnegie Hall? Practice. And practice of the body, we have learned, develops the repertoire of the mind, equips us with reason and judgment.

Wilson wholeheartedly agrees: "We, the beneficiaries if this incomprehensibly long process, arrive with a selective but deeply imbedded, widely distributed 'knowledge' of our own past and acutely primed to adapt to a future we cannot possibly predict."[116] Not only does our own physical experience develop our brains and ways of life to move forward, but the tacit work of our ancestors has evolutionarily armed us with skills with which to face the future.

DEFINITION OF CULTURE/HISTORY

"…objects do not simply exist in a culture, but, permeated as they are with its beliefs, values, fears, and fantasies, actually define it."[117] –Ellen Upton and J. Abbott Miller

Ours is a "digital age," or so it is often defined. But even within this pervasive view, we are still surrounded by nature and by things. Our things may link us to a greater expanse of time, and they link us to one another in a similar way, but they also define the present: in a personal manner in that they literally punctuate the movements of everyday life, and in a more universal manner in that they define aesthetics and therefore the tastes and predilections of an era. Crawford recognizes the dual role in working with his hands: "Here is a paradox. On the one hand, to be a good mechanic seems to require personal commitment: I am a mechanic. On the other hand, what it means to be a good mechanic is that you have a keen sense that you answer to something that is the opposite of personal or idiosyncratic; something universal."[118] To do this work is to define the self, but within a much broader context: one of tradition and canonical knowledge. And it is also to contribute to this canon, which in turn steers its direction and defines its current place in the realm of culture.

Our things, in being physical entities, quite literally define the way we live in that they determine—through their placement and use—the way we move about, inhabit, and perceive space. Both Focillon and Dewey acknowledged the role of forms as a sort of rupture, that which punctuates the flow of life and brings rhythm to it. Our things create our daily and special rituals. Fariello states:

> Ritual is a way of moving through an activity to bring a heightened awareness of the actions that form it. In many preliterate societies, ritual is prescribed and carries within it a collective memory of some important aspect of culture…there are few opportunities to experience ritual in our daily lives. This is not necessarily true for

> craftsmen, for the daily act of making is a ritualized process, and the resultant object allows its holder to participate in ritual through use.[119]

For the maker and user both, things create a rhythm to life. I define ritual more loosely than Fariello, and argue that my toothbrush, for example, is responsible for my daily experience of ritual. There are rituals of day-to-day experience, to which we pay little mind, and there are rituals that open our eyes to experience in the moment and bring reverence, but both types are equally formative of our ways of life. Her point, though, is nonetheless important for makers and owners of made objects. The making of an object with the heightened sense of engagement is an important factor in the definition of culture.

Form defines our understanding of history. We identify which era things came from by the way things are made, by the way they look and function. This is the power of the maker. Risatti states, "The artist's symbol-making power, like the form-making power of the craftsman (in terms of both craft's physical and social function) is always tied to a community's symbol-making traditions and conventions."[120] Through the handmade object we are privy to a historical perspective, and through our experience of the object, we continue to define its trajectory and role. Our things define our culture and our understanding of it and those that are handmade offer a perspective closely linked to time, tradition, and personal experience. Risatti concludes: "…the act of making can never be empty; always it must be directed beyond itself to an intentional object…In this sense, the maker of craft objects, just like the maker of any object, becomes a maker of the world, the maker of a cultural realm that stands apart from nature."[121] This is knowledge, being offered up, generated from the hand to the mind to the hand to nature to culture.

CONCLUSION

The idea of "knowledge" gained from engaging in craft is complicated. For our purposes it is this engagement, this reverence, this awareness of the network in which we live, this awareness of the value of thinking with and through the hands, this overcoming of passivity, this learning the "rootedness" of the self in the continuum of time and tradition. What comes of such knowledge? Does it make us better people, more responsible towards each other and the environment? Certainly. Does it get disseminated as such? Not

particularly. It takes the forms of all the manifestations above, but this is rarely a public endeavor, or even a conscious one. *Can* it be disseminated as such? For something that often seems to flourish as a strictly personal way of life, it clearly affects and is created through other people and the world. It affects different relationships in many different ways.

Perhaps this knowledge functions as a platform from which to operate and educate. It is one that changes behavior and relationships and it can be learned. Just as we may condition ourselves to sit back, be passive, and accept the advances of the modern world, so may we lean forward, pay attention, and be active in making our relationships, things, and environment. This knowledge is a practice, one that can teach engagement and see through to the network so that even if one practices digital fabrication, for example, one can appreciate the continuum of which it is a part and the skills of people that have brought current reality into being. Having been a waitress, there is no doubt in my mind that if everyone worked in service, just for a short time, we might all treat one another better. And so too, if we learn through making, or approach pedagogy through making, even for just a short time, we may have access to this knowledge and use it to inform our ways of being. Perhaps this means it is a "prototype" for architectural, design, and art education through making: makethinkreadwrite; learn and teach through the "knowing how" method rather than the "knowing *that*" method; recognize the systematic nature of craft and making—of existence and what it means to participate in it. Hopefully, this thesis, which includes the rocking chair I made, exemplifies its own thesis: making can be as intellectual as it is manual, and matters now. The reverse is not often true: that "knowing that," and just writing, helps one know how. Hopefully this thesis also affirms the value of the type of degree I've pursued, the MSAS, which is interdisciplinary in scope, housed within a school of architecture, and focused on the work of the hand—opening my eyes to appreciate the skills of people in other fields and how they all relate in one way or another to the making of what is, in the end, a chair.

I call on The Goldfinch once more, which pulls together many of my ideas about the value of more consciously-made "things." Here, Hobie, a furniture restorer, speaks to the protagonist, Theo, about their business:

> I suppose it's ignoble to spend your life caring so much for *objects*…Where's the nobility in patching up a bunch of old tables and chairs? Corrosive to the soul, quite possibly…Idolatry! Caring too much for objects can destroy you. Only–if you care for a thing enough, it takes on a life of its own, doesn't it? And isn't the whole point of things–beautiful things–that they connect you to some larger beauty? Those first images that crack your heart wide open and you spend the rest of your life chasing, or trying to recapture, in one way or another?[122]

And perhaps this is what I'm doing in this search for meaning from making, chasing the proverbial dragon—those images, those flits across the eye—for what it means to be here amongst everything. For while possible answers lie within these pages, there is always, always, that possibility that what I've gleaned from listening to material and the people connected to it is only a fleeting flicker in some much greater reality, far beyond our comprehension.

But this is always the case, no matter our discipline and inclinations, that our tiny view of something which we understand ourselves to be a part of is just that. Yet, the force that drives these ideas about making is the same one that drives innovation and technology forward: the search to make a mark on the world, to order our lives around us in a way that gives us purpose, and to find answers to the questions that ask what it all means. This chair holds some of these answers for me. It holds the meaning and purpose of relationships. It holds history and future, and it holds my knowledge, both practical and personal, about how I encounter the world. This is the knowledge that making a chair built. (Figs 14-26, p. 52-55)

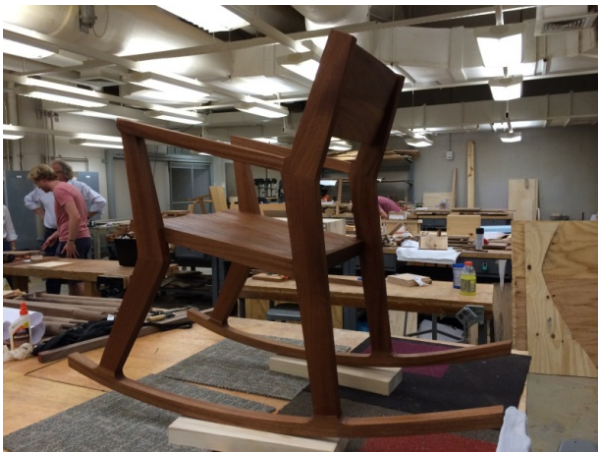


Fig. 14

Fig. 15

Fig. 16

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Fig. 18

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Fig. 24

Fig. 25

Fig. 26

NOTES

[1] Howard Risatti, *A Theory of Craft*: *Function and Aesthetic Expression* (Chapel Hill, NC: The UNC Press, 2007), 152-153. Italics mine.
[2] Risatti, *A Theory of Craft,* xvi.
[3] Frank Wilson, *The Hand: How its Use Shapes the Brain, Language, and Human Culture* (New York: Pantheon Books, 1998), 51.
[4] Ibid., 152.
[5] Risatti, *A Theory of Craft, 17.*
[6] Marx, *Capital,* I: 708-9, quoted in Risatti, *A Theory of Craft, 50.*
[7] Risatti, *A Theory of Craft, 53.*
[8] Perreault laments: "As the world of work becomes universally computer dominated, forcing upon one's mental life a space that is no space, a space that is without hue, substance, texture, or poetic resonance, art has two choices: capitulation to the no-space, exploiting the speed, efficiency, and boredom of bits and bytes, or balancing the no-space with the intense tactility that art in crafts media can alone provide. When one is working with a computer—even if only for word processing…the body disappears." John Perreault, "Craft is Art," in *Objects and Meaning*, ed. M. Anna Fariello and Paula Owen (New York: Scarecrow Press, 2005), 75.
[9] Manuel deLanda, "Material Complexity," in *Digital Techtonics*, ed. Neil Leach, David Turnbull, and Chris Williams (London: John Wiley & Sons, 2004), 19.
[10] Perreault, "Craft is Art," 74.
[11] deLanda, "Material Complexity," 14.
[12] While machines can fabricate things larger, heavier, smaller, more complex, more consistently than handworkers can, all of these things had to be designed first, i.e. built virtually in "gray matter," then drawn, then using handcrafted *models,* then handmade machines, before they became machine-made.
[13] We need to expand this niche so it may cater to the not-so-wealthy too. Everyone deserves to have good design enhance life.
[14] Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," trans. J.A.Underwood (London: Penguin, 2008).
[15] Louise Schouwenberg, "For the Love of Things," in *Toward a New Interior: An Anthology of Interior Design Theory*, ed. Lois Weinthal (New York: Princeton Architectural Press, 2011).
[16] Patricia Malarcher, "Critical Approaches: Fragments from an Evolution," in *Objects and Meaning*, ed. M. Anna Fariello and Paula Owen (New York: Scarecrow Press, 2005), 46-47.
[17] Authors such as Lisa Iwamoto and Emilia Terragni argue that technology is "responsible for opening up the world, allowing easier access to knowledge and communication, and…it becomes apparent that contemporary product design reflects a world that is coming together as a whole, a world that is more conscious of its many parts than ever before," (Emilia Terragni, "Preface," in *& Fork,* Phaidon book of 100 contemporary product designers [London: Phaidon Press, 2007]) and that digital fabrication demarks an expansion of the role of the architect and a *return* to history, where architects oversaw "the building and construction management process...," allowing for "making to become knowledge and affords…a better understanding of what machines can do and how tools work." (Lisa Iwamoto, *Digital Fabrication: Architectural and Material Techniques* [New York: Princeton Architectural Press, 2009] 6-7).

There is no question that access to knowledge and communication is more available, but how does this mark a return to history? A return to history is not something that's actually possible, ever, but particularly now when we have so far surpassed the context in which production resides and the tools that are being used. Iwamoto champions that digital fabrication allows thinking, doing, design, and fabrication to blur, becoming a nonlinear process and that decisions as to which machine and method to use determine design intent and require knowledge of how the machines work. But this is the case so much more so with the work of the hand. This reads to me more as an argument for the hand. In digital fabrication the limits are far less, and materials are forced into submission by machines.

This "opening of the world" is, of course, the ideal vision. But does it get translated to people's use of the everyday object? Is the "connectedness" of the work coming through the actual making and use of the designs once they leave the studio or is it only in the approach to the designs from a theoretical framework that gets left by the wayside once production begins? I want to agree with their approach, but Terragni follows: "The current generation may have grown up with computer technology present in all aspects of life, but we are also fascinated and inspired by the beauty of nature. For example, contemporary designers can be seen using the most sophisticated technologies to precisely reproduce floral patterns and natural structures in their work." The problem here, of course, is that most often,

the designers have not really seen these patterns and structures in real life. These reproductions come from data sourced from the internet, plugged into a program, and therefore the reproduction doesn't at all speak to the experience of the thing itself. The experience of the thing is completely absent in the reproduction. It loses its sensory quality and also its emotional quality that *does* truly connect us and it makes the experience more of an intake of information than an act of perception of nature.

[18] Ibid., 186 (italics mine)

[19] "Workmanship: The Hand and Body as Perceptual Tools" in *Objects and Meaning*, ed. M. Anna Fariello and Paula Owen (New York: Scarecrow Press, 2005), 198-199.

[20] Martin Heidegger, *Being and Time*, 1927, reprint (New York: Harper Perennial Modern Classics, 2008), chapter 3.

[21] Risatti, *A Theory of Craft*, 202.

[22] DeLanda proposes that where royal science has imposed form on matter, craft has teased out matter in collaboration with material (following its lead). (deLanda, "Material Complexity," 20).

[23] Of course, wood too is manipulable into an isotropic material, with the development of "wood based products" such as plywood, particle board, etc., but I am talking here about the material in its natural form.

[24] Juhani Pallasmaa, "An Architecture of the Seven Senses," in *Toward a New Interior: An Anthology of Interior Design Theory*, ed. Lois Weinthal (New York: Princeton Architectural Press, 2011), 41.

[25] David Pye, *The Nature and Art of Workmanship* (London: A & C Black, 2007).

[26] Ibid., 82.

[27] Suzanne Ramljak, "Intimate Matters" in *Objects and Meaning*, ed. M. Anna Fariello and Paula Owen (New York: Scarecrow Press, 2005), 191.

[28] Not to mention the Tree of Knowledge, the Tree of Life…

[29] Henri Focillon, *The Life Forms in Art* (New York: Zone Books, 1992), 165.

[30] Donna Tart, *The Goldfinch* (New York: Little Brown and Company, 2013) 170.

[31] Bower, Jim. "Carbon 101: Understanding the Carbon Cycle and the Forest Carbon Debate." Dovetail Partners, 2012.

[32] Octavio Paz, in his Essay "Use and Contemplation" in *In Praise of Hands: Contemporary Crafts of the World* (Greenwich, CT: New York Graphic Society, 1974) talks of how the craft object speaks to us about our own life and death. Craft offers a deeper, more immersive relationship to the world and to others. With craft comes the acknowledgement of living life in a certain way, with a certain reverence for the everyday things and experiences and people one encounters, and so comes the notion of death and decline. For Paz, craft is an opening to let all of this in and to be with it comfortably. "The craftsman does not seek to win a victory over time, but to become one with its flow."(22) In my time as an art handler in museums I have ranted about letting things, objects, works of art die—sick of the white gloves—but I think I mean more that they should be allowed to live the lives that naturally play out. Should we make no effort to keep them? No, but we also shouldn't preserve everything in glass boxes. I think the nature of craft is that it recognizes its own life span and passes on only what it needs to for the sake of keeping history alive.

[33] Paz, "Use and Contemplation," 23.

[34] Suffice it to say that recording my actions would create an artificial experience of "being in the process" to a degree, but this was something I had to accept for what it was and move on if I was going to get anywhere. In actuality, writing about any process at all creates artifice, as we can look at language as artifice, but then we get stuck in a "Schrodinger's Cat"-like meta-problem that is far beyond the scope of this project.

[35] http://myrockingthesis.wordpress.com/

[36] Caroline Evans, "No Man's Land," in *Toward a New Interior: An Anthology of Interior Design Theory*, ed. Lois Weinthal (New York: Princeton Architectural Press, 2011), 136.

[37] To inquire into how the relationship with an object may situate the self is to take a "subject/object" view of the world, and this is one Heidegger wishes to break us of: "For what is more obvious than that a "subject" is related to an "object" and vice versa?...while this presupposition is unimpeachable in its facticity, this makes it indeed a baleful one, if its ontological necessity and especially its ontological meaning are to be left in the dark." Martin Heidegger, *Being and Time* (New York: Harper Collins, 1962), 86.

[38] Risatti, *A Theory of Craft*, 190.

[39] "Preface," in *Objects and Meaning*, ed. M. Anna Fariello and Paula Owen (New York: Scarecrow Press, 2005), 3.

[40] John Dewey, *Art as Experience* (London: Perigee, 2005), 72.

[41] Ibid., 77.

[42] We could also take a purely scientific approach, borrowing from neurologist Frank Wilson, who explains: "The coupling of hand and eye movement is an enormously complex learning task in which the child must be intensively engaged before it can ever hope to pry its bottom off the floor…Once the brain takes off on its own two feet, there are immediate and continuous changes in the physical state of the body, as well as in relations between the body and the

world…" Like babies must use their hands to learn to be in the world and handling objects teach them about the place of their bodies within it, so should we see the depth of value of this practice as adults. (Wilson, *The Hand*, 99).

[43] Aaron Betsky, "Furnishing the Primitive Hut: Allan Wexler's experiments Beyond Buildings," in *Toward a New Interior: An Anthology of Interior Design Theory*, ed. Lois Weinthal (New York: Princeton Architectural Press, 2011), 209.

[44] Risatti sees it similarly: "Craft objects stand as concrete expressions of the power of human creativity to wrest a realm of culture from nature…For craft objects still carry within them the visual memory of their generating natural forms and the human overcoming of nature in the creation of a world of human expression." (*A Theory of Craft*, 65). Heidegger too comments: "Now the entities within the world are Things—Things of nature, and Things 'invested with value.' Their Thinghood becomes a problem; and to the extent that the Thinghood of Things "invested with value" is based upon the Thinghood of nature, our primary theme is the Being of Things of Nature—Nature as such." (*Being and Time*, 91).

[45] Maurice Merleau-Ponty, James Edie, trans., *The Primacy of Perception and Other Essays* (Evanston, IL: Northwestern University Press, 1964).

[46] Focillon adds, "The touch is the true contact between inertia and action…Touch is structure. It imposes on the form of the animate being or the object its own form, which is not merely value and color, but also…weight, density and motion." The use of the hand determines the organization and perception of our environments. (Focillon, *The Life of Forms in Art*, 110.)

[47] Merleau-Ponty takes these ides further yet, pointing out that truth and the information given by perception are not always congruent. This means that perception is giving us something other than truth. It is giving us "presence." And it is presence that one constructs in memory, presence that holds meaning, presence that we relate to emotionally. Objects affect us deeply through their presence and thus through our perception of them. Presence is more than physical. It allows us, for example, to perceive the actual size of an object, even if it is far away—its position in the world—but it also allows us to imagine the way it might feel to the touch, smell, or comport itself if held in our arms. Perception is the vehicle by which objects become personal. In this way the mind extends into the body, through the hands. It extends to the hands' intent, emotional disposition (do we treat an object with care or throw it around?), and instructions for use.

[48] This is also a concept that Heidegger dislikes. He notes that, "Perception is consummated when one addresses oneself to something as something and discusses it as such." (*Being and Time*, 89). But does this then assume the "subject/object" discourse he dislikes to be valid? Is my perception of a piece of furniture based on the piece addressing me as a piece of furniture? And if I have *made* this piece of furniture, given it its current state of being and form, than have I essentially given it the language with which to address me? Am I essentially addressing myself then?

[49] Wilson, *The Hand*, 276.

Polly Ullrich's weighs in: "Rather, consciousness and perception emerge from a complicated blend of interaction between one's body and the world that engages all our sensory, motor, and intellectual capacities. Human perception, rather than being transcendent, is a reciprocally lived experience—we are intertwined in things; our selves are caught up in the fabric of the world; our understanding is inseparable from the body and its senses." (Polly Ullrich, "Workmanship: The Hand and Body as Perceptual Tools," in *Objects and Meaning*, 208.)

And Risatti: "For Husserl, intentionality refers to the thesis that all consciousness is consciousness of objects—whether a physical object or an idea doesn't matter." (*A Theory of Craft*, 252).

In Wim Wenders', *Notebook on Cities and Clothes*, Yamamoto discusses his acceptance of his own style. As a maker of art and furniture I've always wondered if I would like my "style" and would like the things I make if they were not mine and I encountered them as the creation of someone else. But this is impossible because of perception. Instead, you must look at things you make and accept them as some reflection of yourself.

[50] Heidegger, *Being and Time*, 95.

[51] Risatti too speaks of the material of equipment disappearing into its usefulness in the service of fabrication.

[52] Heidegger believes strongly that we can achieve understanding of our role in a relationship with a thing only through casting aside our notion of our individual perspectives of things: "The achieving of phenomenological access to the entities which we encounter, consists rather in thrusting aside our interpretive tendencies, which keep thrusting themselves upon us and running along with us, and which conceal not only the phenomenon of such 'concern,' but even more those entities themselves *as* encountered of their own accord *in* our concern with them." (Ibid, 96).

[53] It does ease my mind, for some reason, to know that some tools really have begin to function as extensions of my mind and body without my noticing, as this functions as evidence that I have grown my skills, am working towards "real" craftsmanship. Wilson describes this feeling as "mystical," explaining that it comes from "…the combination from a good mechanical marriage and something in the nervous system that can make an object external to the body feel as if it has sprouted from the hand…" (Wilson, *The Hand*, 63).

[54] Tod Williams and Billie Tsien, "Slowness," http://www.twbta.com/#/2204. Last accessed September 9, 2014.
[55] Wilson, *The Hand*, 244-245.
[56] Risatti, *A Theory of Craft*, 127.
[57] Ibid., 27.
[58] Ibid., 149.
[59] Merleau-Ponty, *The Primacy of Perception*, 20.
[60] Tartt, *The Goldfinch*, 770.
[61] Beaudrillard, *The System of Objects*, trans. James Benedict (New York: Verso, 1968), 26.
[62] These are not the only interesting issues that arise from objects regarding the perception and evidence of time. Focillon Borrows from Arthur Danto's ideas (*Transfiguration of the Commonplace*, [Cambridge: Harvard University Press, 1981].) about how objects of art start to become recognizable as from a certain era. These recognizable forms (often in retrospect only) are what shape our perception of history. A Nakashima is unmistakably a Nakashima. Mid-century modern pieces have their own presence and posture.

Walter Benjamin wrote of how the reproduction lacks the presence in time and space as well as the history of the existence of the original. While this warrants criticism to a degree, in that the reproduction too has its own presence in time and space, and creates its own history of existence, it is true that the life of the reproduction is removed from the original intent of the artist and any message or mood of the original work in that the intentions of making a reproduction are simply that. These observations do bring to light the fact of the life of an object or work of art and that each object/work carries with it its own memory and meaning—be they within the scientific analysis of the chemicals n the cerulean blue of a painting, or in the dents and dings of an armoire that belonged to your grandmother. Each piece holds evidence of its life and therefore carries the markings of time, place, and meaning
[63] M. Anna Fariello "'Reading' the Language of Objects" in *Objects and Meaning*, ed. M. Anna Fariello and Paula Owen (New York: Scarecrow Press, 2005), 148.
[64] Risatti, *A Theory of Craft*, 304.
[65] Risatti states, "…intention also forces us to question whether the non-functional features found in functional objects are actually intentional or features that simply have 'seeped' into the object unbeknownst to the maker." (Ibid., 240) Even if the maker has not deliberately poured sentiment or statement into a piece, it becomes imbued with meaning by virtue of its being made with intent.
[66] "Considering Husserl's premise that every thought must have an object, then both the fine artist and the fine craftsman, as conscious and intentional makers must make some*thing* and the some*thing* they make must be the object of their thought."(Ibid., 276)
[67] Ibid., 289
[68] Frank Wilson, *The Hand*, 7.
[69] Ibid., 58.
[70] Ibid., 291
[71] Ibid., 34.
[72] Ibid., 33.
[73] Ibid., 8.
[74] Matthew Crawford, *Shop Class as Soul Craft: An Inquiry into the Value of Work.* (New York: Penguin Books, 2009), 164.
[75] Florian Aicher, "Proven by time and inspired—The new craftsmanship," in Herman Kaufmann, ed. *Building with Timber: Paths into the Future* (Munich: Prestel Publishing, 2012), 202.
[76] Risatti, though he proposes differentiation between workmanship, design, and craftsmanship, agrees with the latter idea, stating: "Instead of being separated into stages, conceptions and execution are integrated so that a subtle feedback system occurs when physical properties of materials encounter conceptual form and conceptual form encounters physical material. In this encounter, thinking and making, visualizing and executing, *theoria* and *praxis* go back and forth, hand in hand. As this happens, as ideas lead to the manipulation of materials and materials condition ideas, a truly dialectical and dialogical process takes place. It is this process of mutual conditioning and modifying that occurs during making that is at the heart of the creative act of craftsmanship." (Risatti, *A Theory of* Craft, 169).
[77] Heidegger, *Being and Time*, 98.
[78] Focillon writes these similar sentiments: "A very human familiarity exists between the tool and the hand. Their harmony is composed of the subtlest sort of give-and-take that cannot be defined by habit alone. This give-and-take allows us to understand that, once the hand conforms to the tool, once the hand has need of this self-extension in matter, the tool itself becomes what the hand makes it. The tool is more than a machine." (Focillon, *The Life of Forms in* Art, 109.)

[79] Bruce Metcalf, "Evolutionary Biology and Its Implications for Craft," in *Objects and Meaning*, ed. M. Anna Fariello and Paula Owen (New York: Scarecrow Press, 2005), 221-222.
[80] Wilson, *The Hand*, 256.
[81] Matthew Crawford cites this as a particularly unsatisfying position.
[82] Crawford, *Shop Class as Soul Craft*, 156.
[83] Richard Diebenkorn in Gerald Nordland, *Richard Diebenkorn* (New York: Rizzoli, 2001), 11.
[84] Crawford, *Shop Class as Soul Craft*, 103.
[85] Ibid., 99.
[86] Cheryl Sandberg, *Lean in: Women, Work, and the Will to Lead* (New York: Knopf, 2013), 29-30.
[87] Wilson, *The Hand,* 299.
[88] Jad Abumrad, "Why 'Gut Churn' is an Essential Part of the Creative Process," *99U, accessed March 8, 2014. http://99u.com/videos/7278/jad-abumrad-why-gut-churn-is-an-essential-part-of-the-creative-process*.
[89] Maria Popova, "Kierkegaard on Anxiety and Creativity," *Brain Pickings*, accessed March 8, 2014. http://www.brainpickings.org/index.php/2013/06/19/kierkegaard-on-anxiety-and-creativity/.
[90] Lest this story sound like me throwing Igor under the bus, I should explain that Mark oversaw the chair making, with Igor keeping an eye on my progress, while Igor is overseeing this paper, with Mark keeping an eye on my progress. There was no way for Igor to have known, based on what I had shared with him, that this was a constraint I had created out of self-doubt, not out of need. To further exonerate him, it should be clear that I also didn't realize this until Mark pointed it out.
[91] Wilson, *The Hand*, 307.
[92] And keep in mind, this is only a list of people I spoke with about the project as I made the chair. I have talked with many, many more since I completed the chair.
[93] Paz, "Use and Contemplation," 21.
[94] Wilson, *The Hand*, 174.
[95] Paz, "Use and Contemplation, 23.
[96] Ibid.
[97] Dewey, *Art as* Experience, 65.
[98] Fariello, "'Reading' the Language of Objects," 149.
[99] Ibid., 156.
[100] Risatti, *A Theory of Craft*, 55.
[101] Ibid., 57.
[102] Dewey, *Art as Experience,* 22-23.
[103] Focillon, *The Life of Forms in Art*, 17.
[104] Fariello elaborates: "Lifting us out of the ordinary, the object has the uncanny ability to transform daily experience, as the maker originally transformed material. Could an elevated feeling of creativity, similar to that experienced by a craftsman in the studio, be transferred to the object's future holder? If so, then life has the potential for a day-to-day enrichment through a self-conscious awareness and appreciation of objects. ("'Reading' the Language of Objects," 163.
[105] "A deeply human connection is created between viewer and maker with the fine craft object as intermediary between them. It is in this way that the fine craft object speaks the artist's intentions and opens a dialogue with the beholder." (Dewey, *Art as Experience*, 280.) While I don't want to dwell on the life of the object with the user as this paper is specifically about how making an object is an experience of value, and the subject of nostalgia seems almost too daunting a task, it is hard to ignore the way an object may impart meaning to its owner and the way the intent of the maker may become wrapped up in this meaning as the object ages and takes on new meaning to different people over time.
[106] "Man has created his own hands—by which I mean that he has gradually freed them from the animal world, released them from an ancient and innate servitude. But hands have also created man. They have permitted him certain contacts with the world which his other organs and other parts of his body could not vouchsafe." (Focillon, *The Life of Forms in* Art, 161-162).
[107] Ibid., 196.
[108] Risatti argues, "A great leap of the imagination is still involved in the conceptualization of natural things into craft objects." (Risatti, *A Theory of* Craft, 63) In order to make something, one must already have a grasp on how function can be met with technique and material, and this requires practice and failure and the intuitive leap.
[109] Richard Sennett, *The Craftsman* (New Haven: Yale University Press, 2008), 190.
[110] Focillon, *The Life of Forms in Art*, 180.
[111] Risatti, *A Theory of Craft*, 99.
[112] Ibid., 102.

[113] Crawford, *Shop Class as Soul Craft*, 161.
[114] Ibid., 169.
[115] Ibid., 172.
[116] Wilson, *The Hand*, 290.
[117] Ellen Upton and J. Abbott Miller, *The Bathroom, the Kitchen, and the Aesthetics of Waste (A Process of Elimination).*Exhibition catalogue (MIT, 1992).
[118] Crawford, *Shop Class as Soul Craft*, 97.
[119] Fariello, "'Reading' the Language of Objects, 161.
[120] Risatti, *A Theory of* Craft, 234.
[121] Ibid., 253.
[122] Tartt, *The Goldfinch*, 756-757.

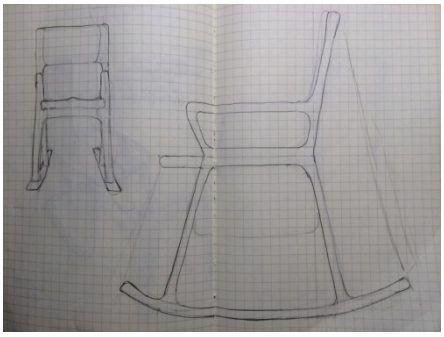
Appendix 1: People talked to/knowledge shared in the process of making a rocking chair

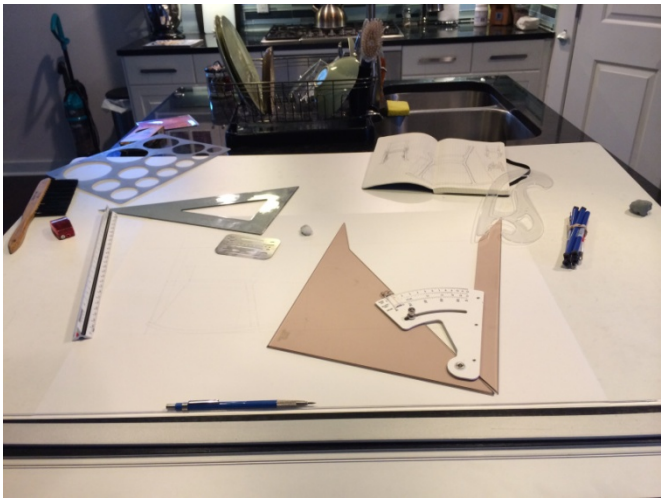
David Daily: my husband, Austin, TX
Mark Macek: wood design professor, thesis advisor, furniture maker, Austin, TX
Igor Siddiqui: interior design professor at the School of Architecture and my thesis advisor, Austin, TX
Clay Odom: interior design professor at the School of Architecture, Austin, TX
Kathleen Higgins: philosophy professor at UT Austin. Kathleen specializes in aesthetics and continental philosophy and guided me through much of my reading related to the process of making. Austin, TX
John Vehko: wood shop manager at the School of Architecture, Austin, TX
Gary and Austin Weeks: rocking chair guru and his son, Wimberly, TX
Sarah Todd and Matt Laprairie: friends. Sarah has an interior design background, Austin, TX
Alex Visotzky and Katie Long: my brother and his girlfriend, Los Angeles, CA
Mandy Blott: my therapist, Austin, TX
Maggie Cohn and Andre Canaparo: former classmate and friends. Maggie sells vintage furniture and housewares, Los Angeles, CA
Edward Stevens: friend, former classmate, furniture maker, Los Angeles, CA
Letitia Ivins: former classmate and fellow art history major. She works for the LA County Arts Commission. Los Angeles, CA
Joshua Palmer: wood shop TA, school colleague, furniture maker, Austin, TX
David Schneider: work colleague, furniture maker, architecture student, Austin, TX
Robin Dusek: graduate coordinator at the School of Architecture, Austin, TX
Ulrich Dangel: graduate advisor, timber specialist, professor at the School of Architecture, Austin, TX
Michael Benedikt: my boss and grad school program advisor, professor at the School of Architecture, Austin, TX
Kendall McNally, Sadie Minkoff, Michelle Schreiber, Katie Burke: my acupuncturists, Austin, TX
Mark and Rachel Berins: my cousins-in-law, Austin, TX and Houston, TX
David Pasztor: friend, mentor, and furniture maker, Austin, TX
Shota Yamaguchi: employee of Mark Macek, furniture maker, Austin, TX
Ace San Miguel: employee of Mark Macek, furniture maker, Austin, TX
Robert Wolfe: Facilities manager, School of Architecture, Austin, TX
Kevin Alter: my boss, architect, Associate Dean of graduate programs at the School of Architecture, Austin, TX
KatieLea Conwell: work colleague, Austin, TX
Claudia Setzer and Michael Greenwald: my mom and stepdad, London, UK, New York, NY
Burt Visotzky and Sandy Edelman: my dad and stepmom, New York, NY
Lori Miranda, Jennifer Braham, Shawn Kanning, Lindsey Wenk, Jenny Dessin (and Sarah Todd, already mentioned above): my book club, Austin, TX

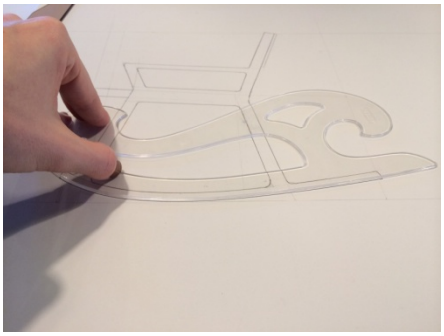
Amelia Dye: friend, Austin, TX
Rachel Simmons: friend of Sarah Todd and professor of interior design at Arizona State University, Phoenix, AZ
Karinne Thornblom: friend, brewer, San Francisco, CA
Joyce Rosner: professor of architecture at UT, artist, Austin, TX
Elizabeth Danze: professor of architecture at UT, principal at Danze Blood architects, Austin, TX
Ron and Debbie Daily, Sarah and Jodi Braham, Marshall and Charlett Frumin: my in-laws, Houston, TX
Kate Catterall and Gloria Lee: Designers and Professors of Design at the College of Fine Arts at UT. I studied with them both earlier on in my curriculum. Kate is a furniture maker and metal-worker. Austin, TX
Tom Rosenberg: Radio, TV, Film major taking an independent study with Mark. We are in the shop at the same time a lot. Austin, TX
Kevin Olsen: Woodshop TA. Kevin took Mark's class last semester and made an adjustable drafting table. Austin, TX
Jesse Kinbarovsky: MFA Design candidate and former classmate, Austin, TX
Bob: Employee at Dakota Hardwoods, Austin, TX
Peter: Employee at Austin Fine Lumber and Plywood, Austin, TX
Warehouse Employee: helped me sort through boards at Fine Lumber, Austin, TX
Sales Rep: at Fine Lumber who calculated my purchase and charged my card. Austin, TX
Eric Timmerman: Son of Robert Timmerman, the owner of Fine Lumber. He helped me load the boards into my car. Austin, TX
Random Fellow: waiting for his lumber pickup at Fine Lumber. He asked me about my project. Austin, TX
Tristan Walker: Student in Mark Macek's Wood Design class. He is designing and building a bed. Austin, TX
Kevin Howard: Wood shop TA, Austin, TX
Morgan Parker: Student in Mark Macek's Wood Design class. She is designing and building a bench. Austin, TX
Molly Purnell: Architecture student, former woodshop TA, furniture maker, Austin, TX
Monica Sanga: Architecture student working in the shop with Molly this semester, Austin, TX
Mina Cikara and Carey Morewedge: friends, Pittsburgh, PA
Fellow at Lowe's: Austin, TX
Fellow at Breed & Co.: Austin, TX
Fellow on the phone at Lehigh Valley Abrasives: Whitehouse Station, NJ
Customer Service Rep on the phone at Norton Industrial: Waco, TX
Joe and Linda on the phone at Fastenal: Austin, TX: I talked with all of these people trying to find the flap disc I needed to grind the shape of the seat.
Katharina, Phillip, Fabian, Andrew: Students in Mark Macek's Wood Design Class, Austin, TX
Sales girl at BCBG at Barton Creek Mall: where I was buying a dress, Austin, TX
Dr. Dan Wheat: professor of engineering who I did an independent study with, Austin, TX

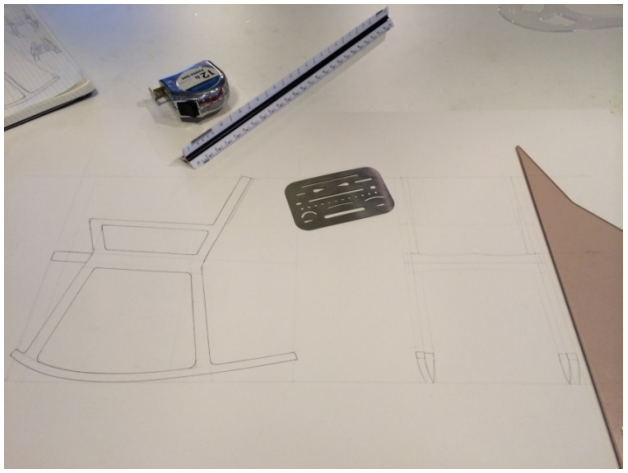
Jamie Chioco: Architect, former customer when I worked at a cafe downtown. Jamie introduced me to Mark a few years ago and gave me advice on how to pursue my interest in wood. Austin, TX
Nick Movshon: friend, Brooklyn, NY
Michael Yates: furniture maker, Austin, TX
Gretchen Rings: my cousin, Chicago, IL
Bridget Gayle: incoming student in the MSAS program, Austin, TX
John Blood: professor of architecture at UT Austin, principal at Danze Blood Architects, Austin, TX
Whit: employee at Woodcraft, Austin, TX
Ben Morris: M. Arch student, Austin, TX
Larry Speck: professor of architecture at UT Austin, principal at Page Southerland Page Architects, Austin, TX
Chris and Evan: employees of Michael Yates, Austin, TX
Judith Birdsong: professor of architecture at UT Austin, Austin, TX
Sofia von Ellrichshausen: visiting professor of architecture at UT Austin, Concepcion, Chile and Austin, TX. Sofia was on my final review
Burton Baldridge: principal at Burton Baldridge Architects, Austin, TX. Burton was on my final review.

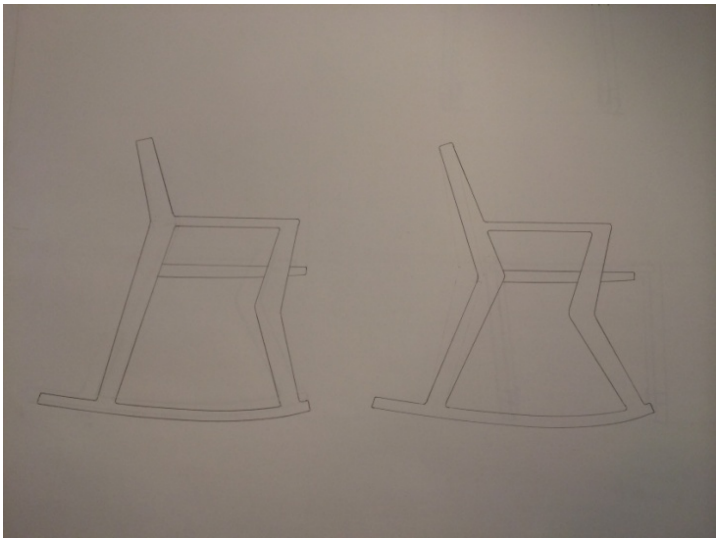
Appendix 2: Process Images and Drawings

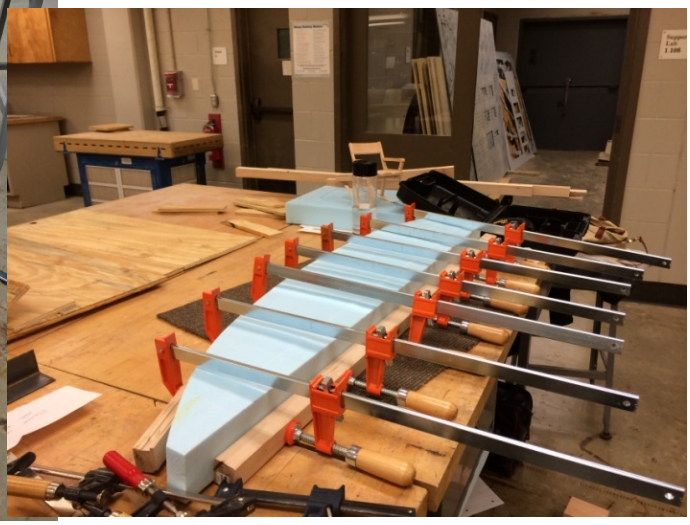


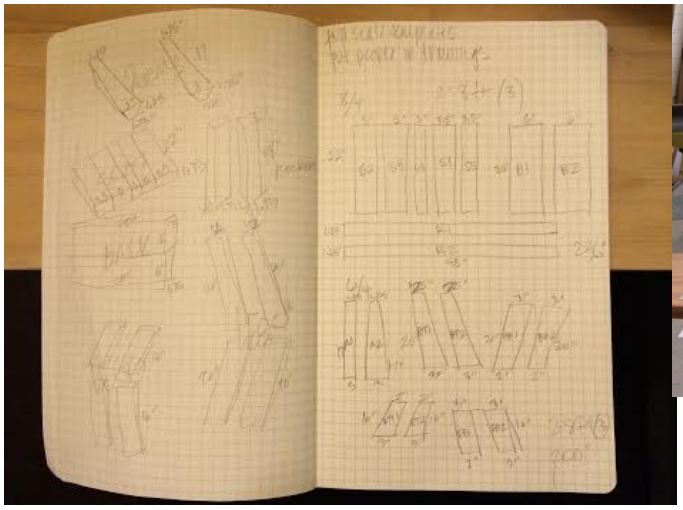


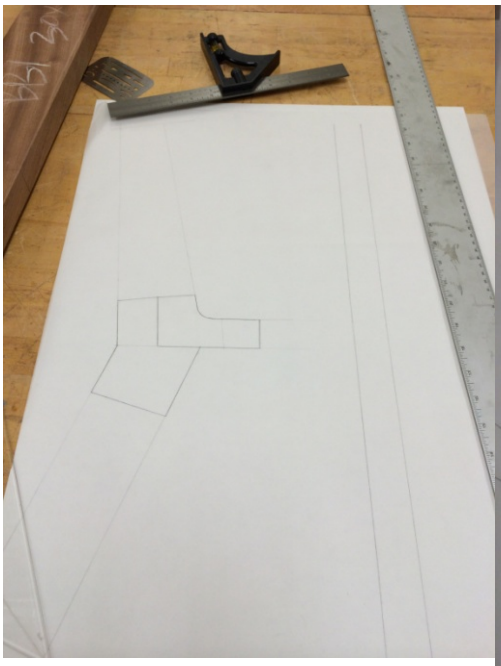


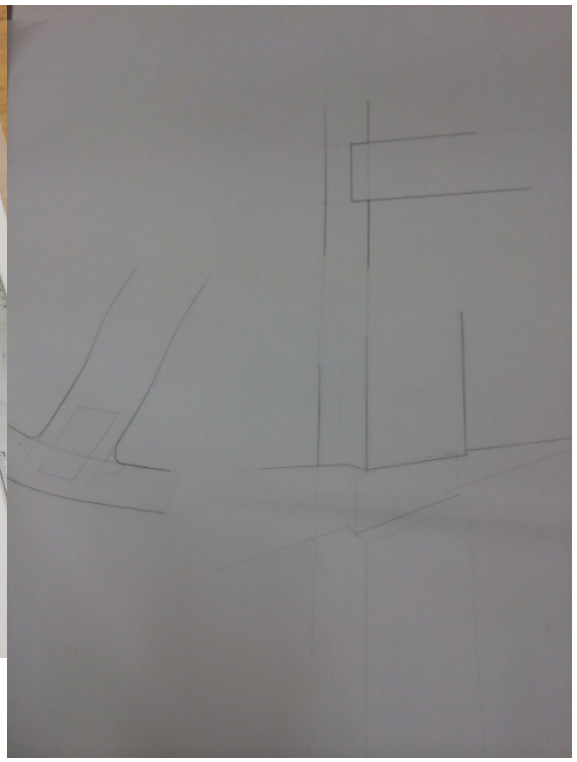


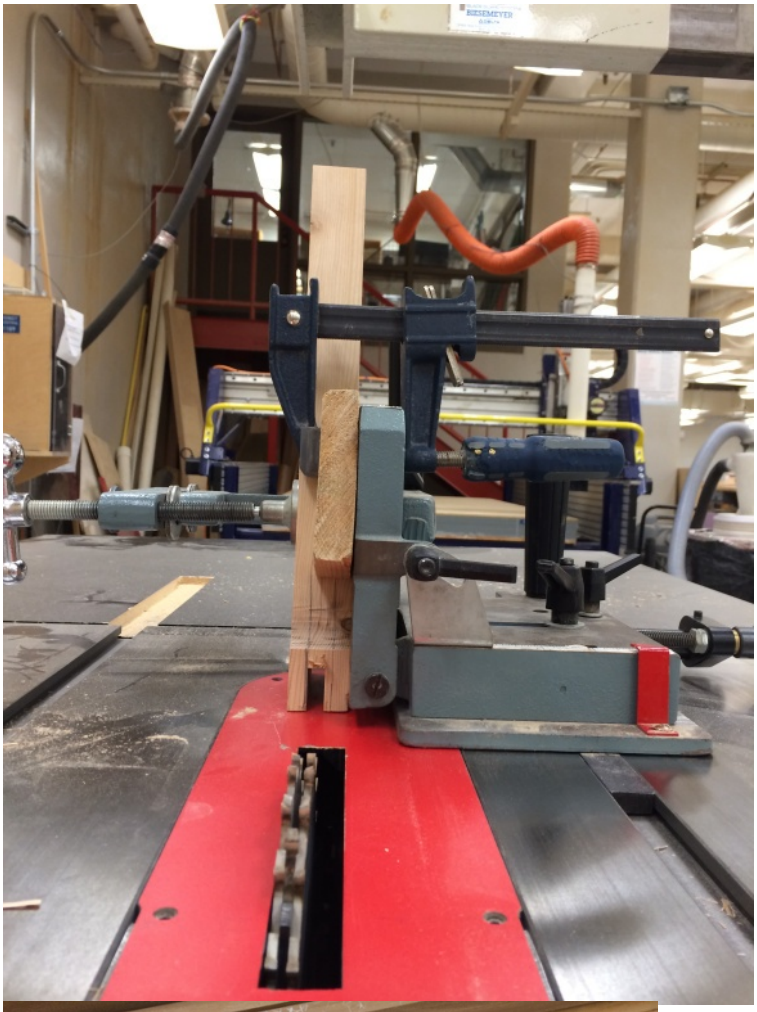


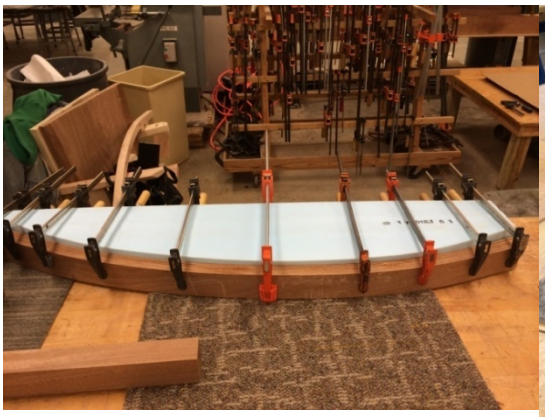


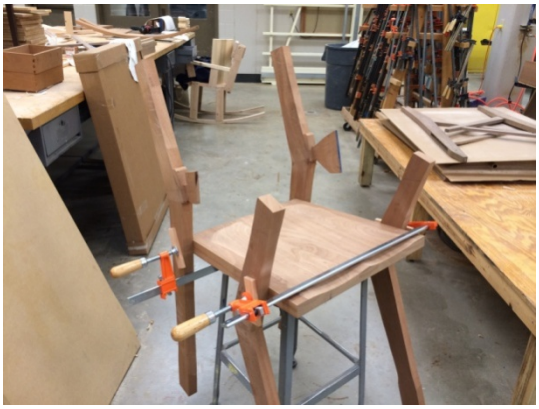


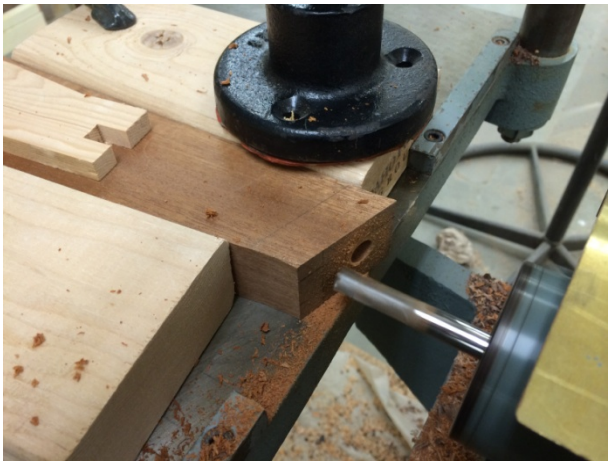


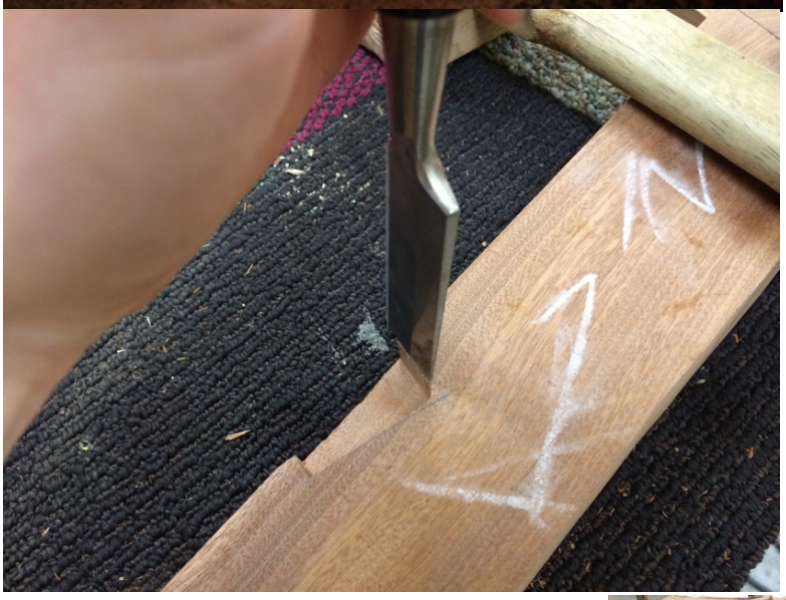


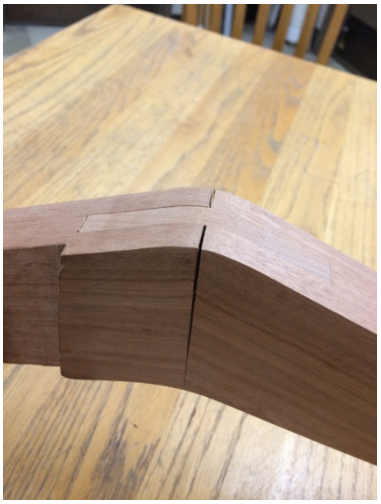


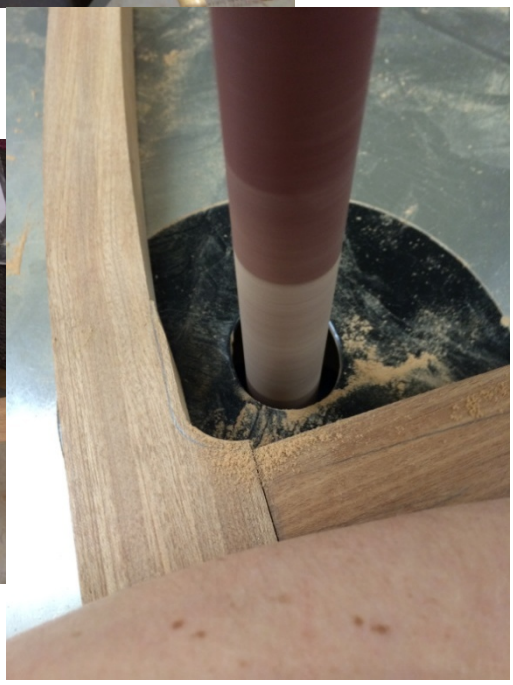


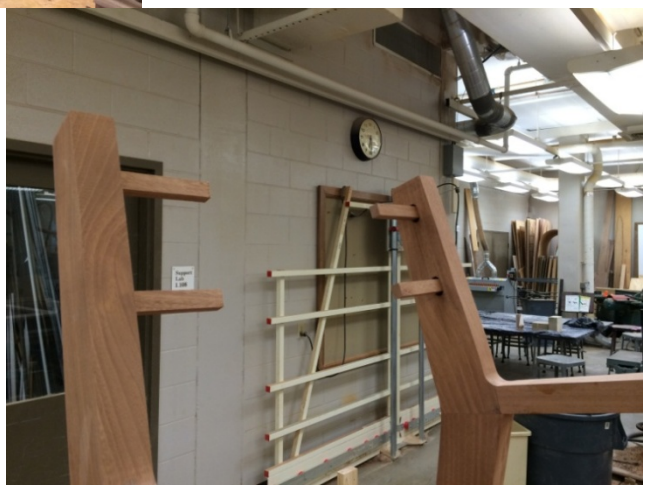


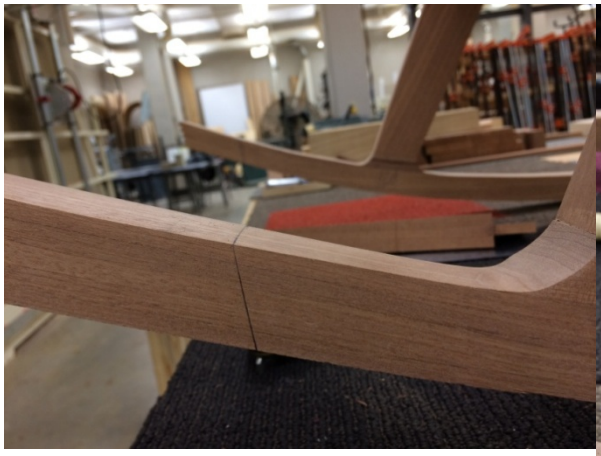




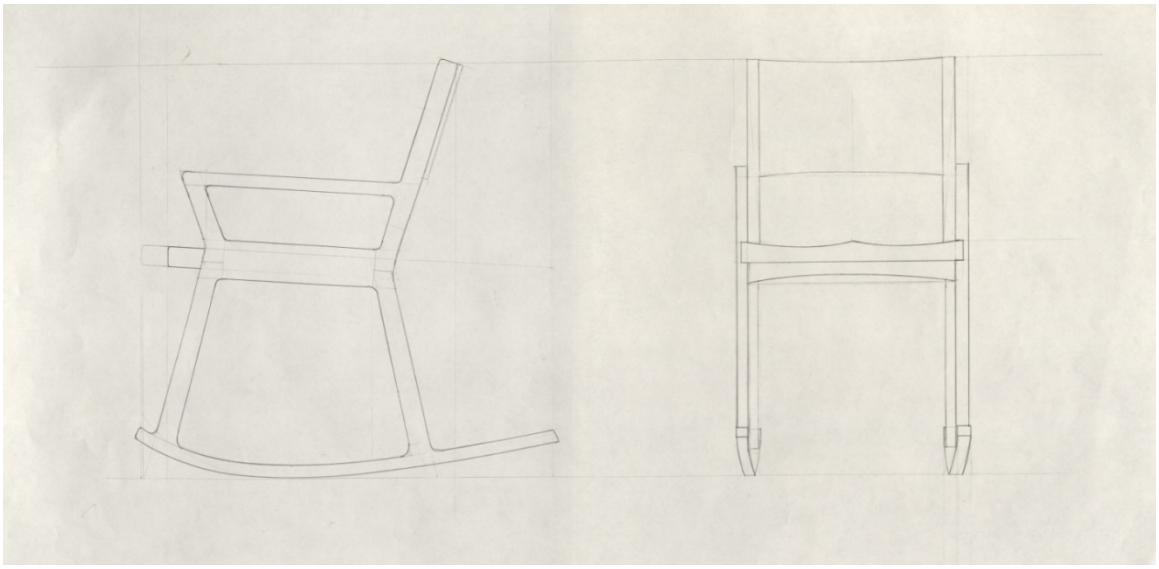


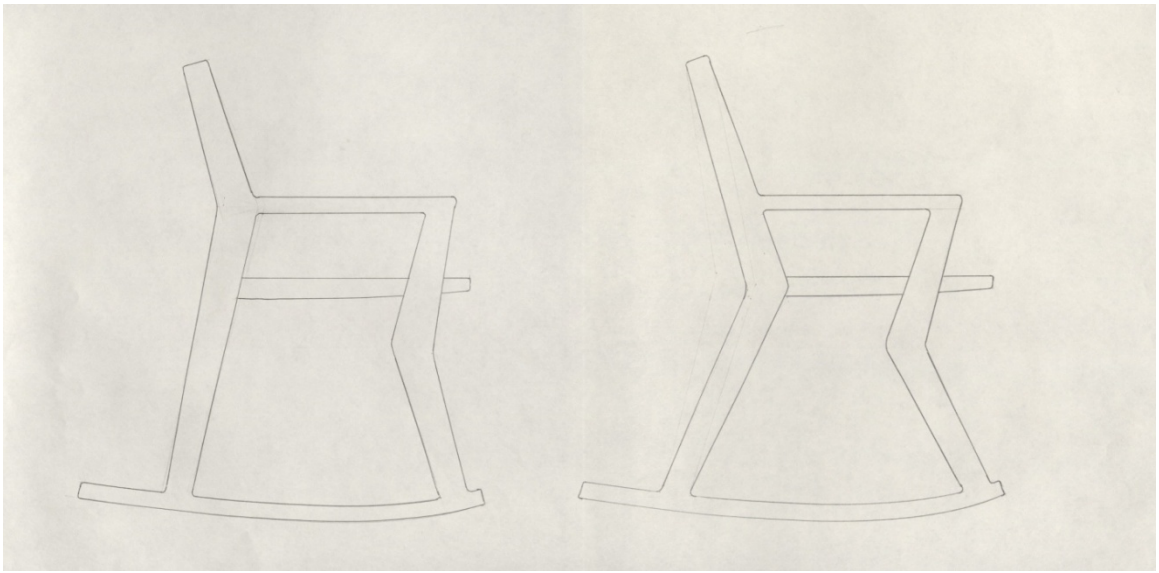


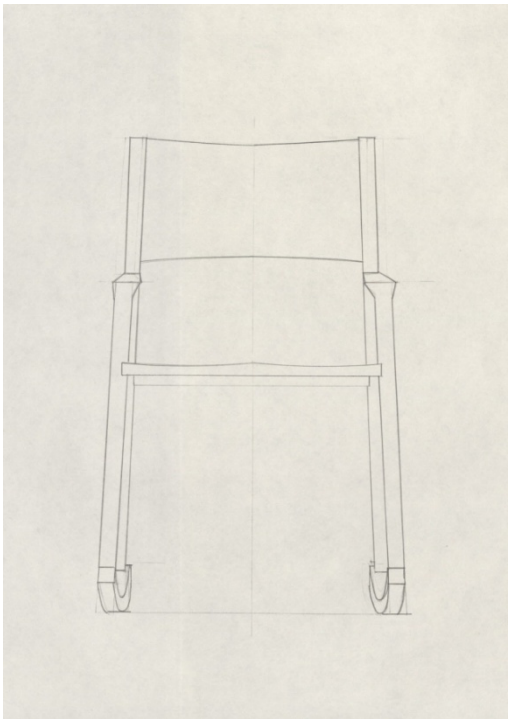


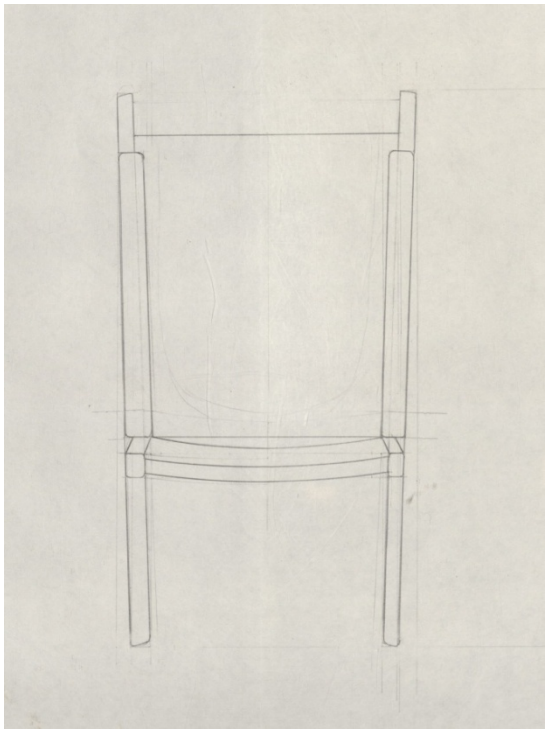


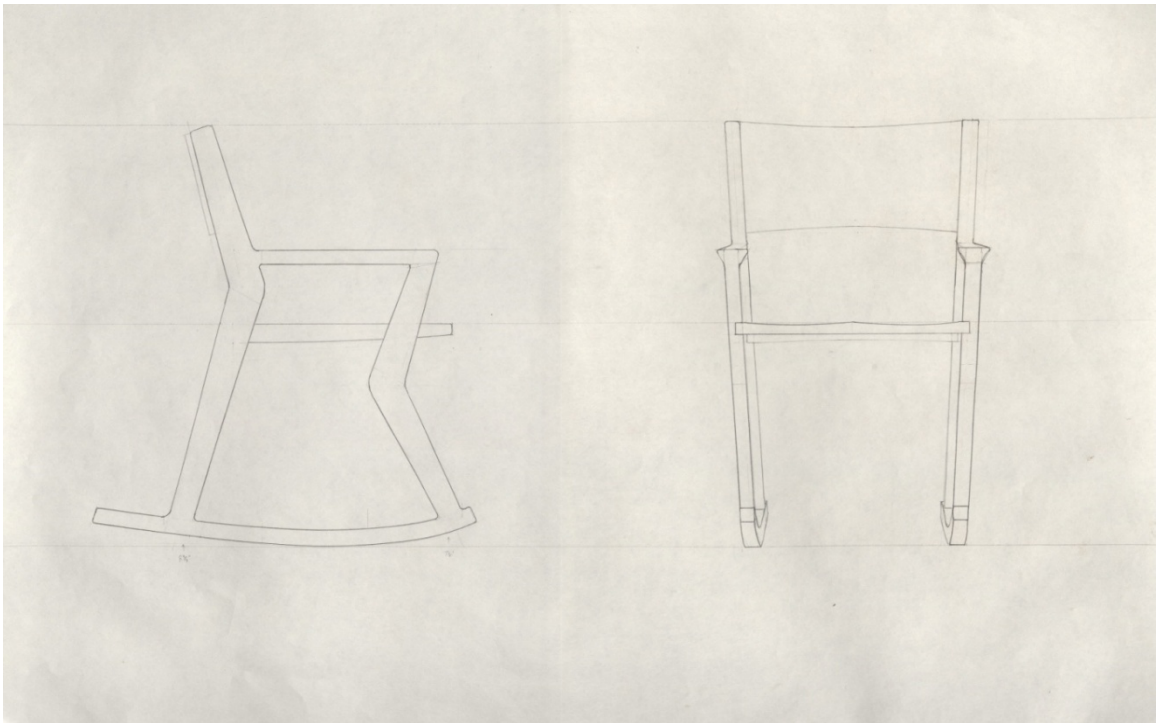

WATCO
DANISH OIL
NATURAL
MINWAX
WIPE-ON
POLY
Hand Rubbed Beauty

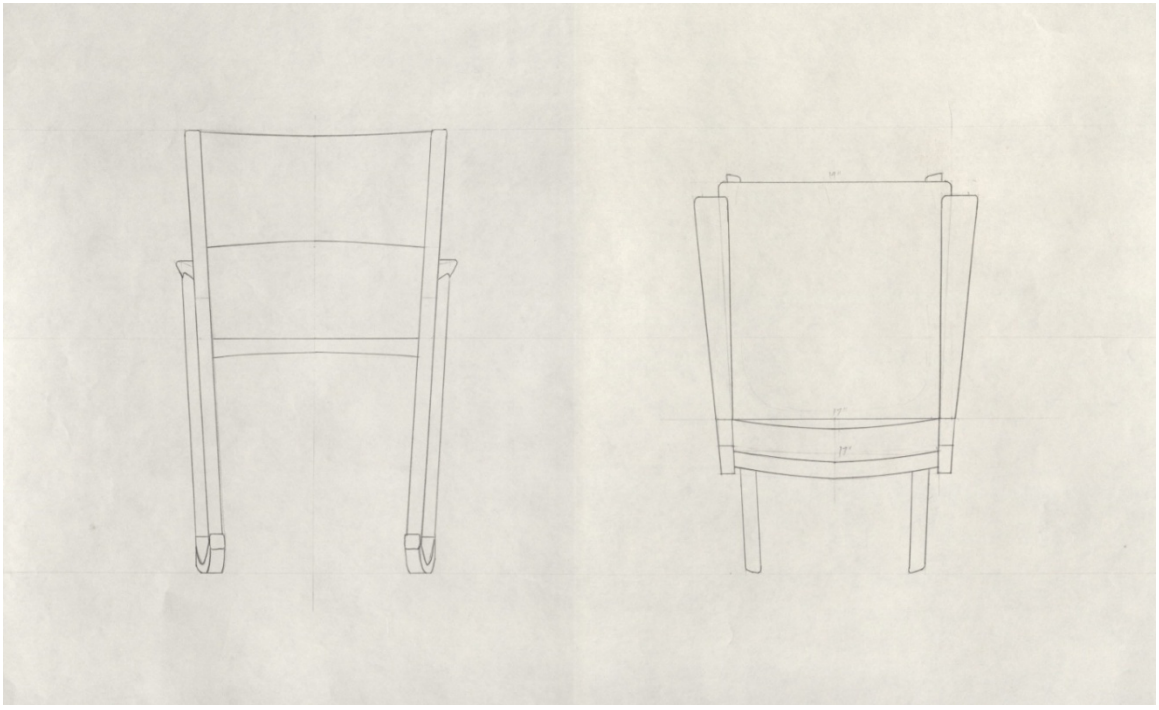


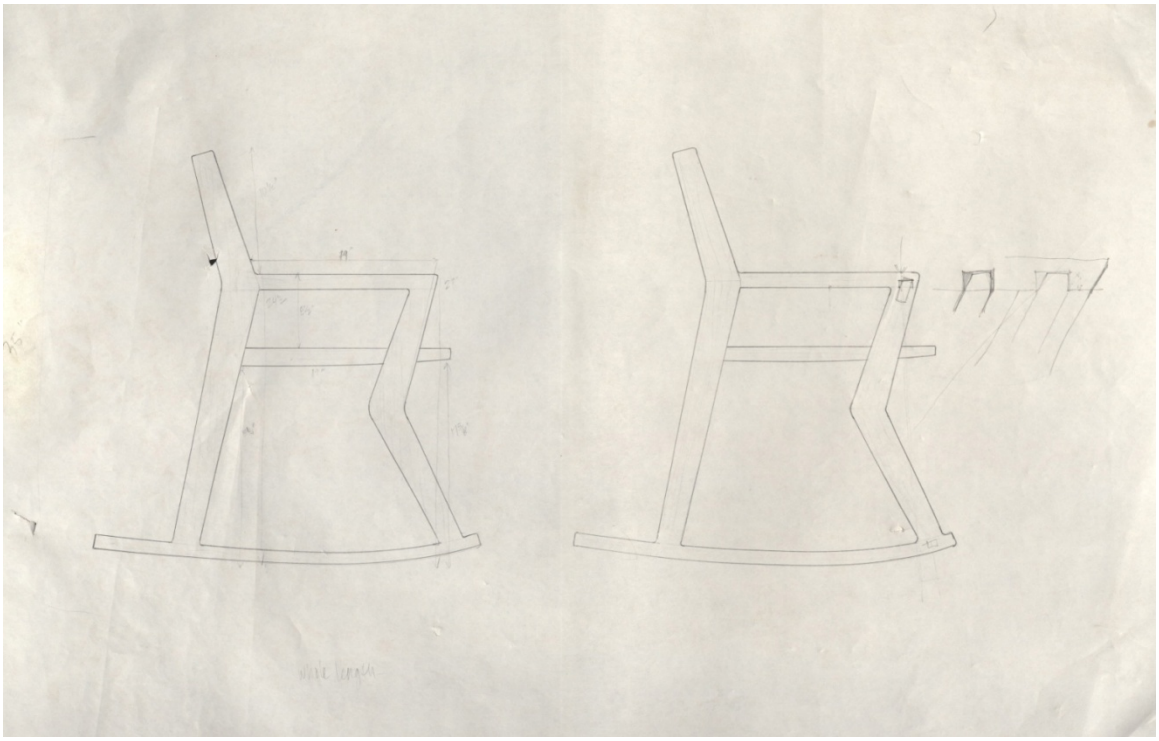


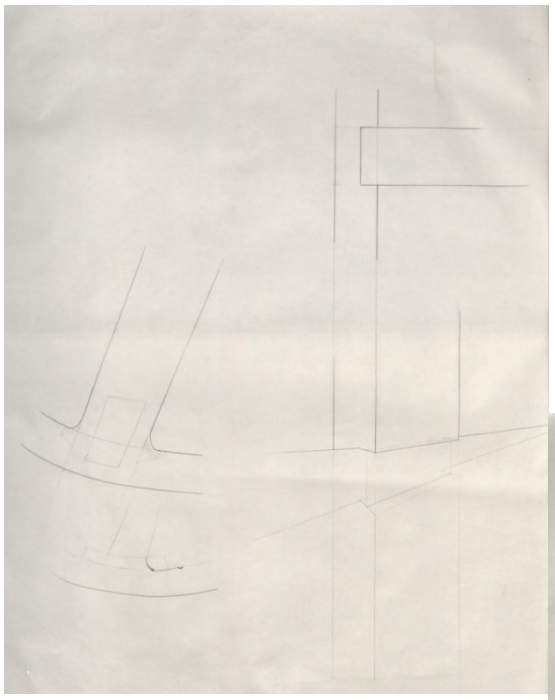


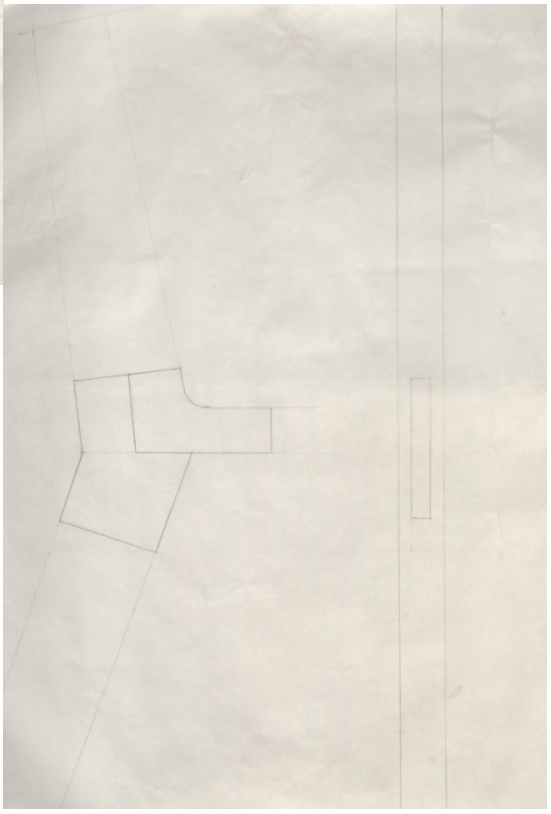












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